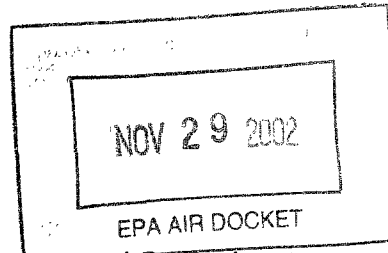




EASTERN RESEARCH GROUP, INC.



MEMORANDUM

TO: Jim Eddinger, U.S. Environmental Protection Agency, OAQPS (C439-01)

FROM: Christy Burlew and Roy Oommen, Eastern Research Group (ERG), Morrisville

DATE: October, 2002

SUBJECT: Development of Average Emission Factors and Baseline Emission Estimates for the Industrial, Commercial, and Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants

1.0 INTRODUCTION

This memorandum describes the development of average emission factors and baseline emissions estimates for the industrial, commercial, and institutional boilers and process heaters included in the population database for use in the development of a NESHAP for these sources. This memorandum discusses the sources of data used in the development of the average emission factors and baseline emissions, the methodology and assumptions used in the development of the emission factors and baseline emissions, and the methodology for reviewing and verifying the accuracy of the emission factors and baseline emissions. The following are sections within this memorandum:

- Section 2.0 Data Sources
- Section 3.0 General Methodology for Developing Emission Factors
- Section 4.0 Averaging Available Test Data to Develop Emission Factors
- Section 5.0 Standardization Methodology and Filling Data Gaps
- Section 6.0 Comparison of Emission Factor Methodologies
- Section 7.0 Review and Verification of Emission Factors
- Section 8.0 Inclusion of Non-Detect Emissions Data Points
- Section 9.0 Representation of Process Heaters
- Section 10.0 Summary of Emission Factor Results

Section 11.0 Development of Baseline Emissions Estimates

Section 12.0 References

Section 13.0 Appendices

2.0 DATA SOURCES

The main source of data used for the development of average emission factors and baseline emissions estimates for industrial, commercial and institutional boilers and process heaters was the EPA emission test database for boilers. This database includes data from test reports that represented various types of boilers, fuels, control devices, and pollutants. Information on the original data sources and the development of this database is discussed in the memorandum, *“Development of the Emission Test Database for Industrial/Commercial/Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants”¹*.

The population database in combination with the model units developed to represent the population database were used to determine which types of boilers, fuel types, and control devices were in the existing population so that corresponding emission factors could be developed for all these combinations. The development of the population database and the model units are discussed in the memoranda, *“Development of the Population Database for Industrial/Commercial/Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants”²* and *“Development of Model Units for the Industrial/Commercial/Institutional Boilers and Process Heaters National Emission Standard for Hazardous Air Pollutants”³*.

Chapter 1 from the Compilation of Air Pollutant Emission Factors (AP-42)⁴ which covers external combustion sources was also used in the review and verification of the average emission factors developed using the emission test database. This review and comparison is discussed in more detail in Section 7.0 of this memorandum.

3.0 GENERAL METHODOLOGY FOR DEVELOPING EMISSION FACTORS

3.1 Selection of Pollutants for Developing Emission Factors

The first step in developing average emission factors was to select only the emissions data from the emissions test database for 30 different HAP of interest for the boiler and process heater NESHAP as well as the criteria pollutants, including particulate matter, carbon monoxide, and sulfur dioxide. The 30 HAP are subset of the 188 listed HAP. They were selected as pollutants to focus on for boilers and process heaters because of their inclusion on EPA lists as pollutants of concern, their representativeness for the other 158 HAP, and because they constitute the largest quantities of HAP emitted. Table 3-1 lists the compounds for which emission factors were developed.

3.2 Selection of Emission Test Data that Corresponds to Model Units

To estimate emissions, average emission factors were applied to different types of boilers and process heaters that are included in the existing population. To accomplish this, the model units that were developed to represent the EPA population database of boilers and process heaters were matched against the emissions test database to identify those test reports that represented the existing population. The emission tests were first matched based on the type of fuel burned during the emission test since this is one of the main distinctions between the various model units. Once grouped by fuel types, the emission tests were grouped according to control devices.

The emission tests that represented all different variations of the same model unit fuel types were grouped into one model unit fuel category. Because the model unit fuel categories that were developed based on the population database were chosen to represent broad categories of fuels, the associated emission data points from the emission database that were matched to these model unit categories represent the range of different fuel types and combinations that are assigned to the model units. For example, emission tests for boilers burning various types of wood, such as bark and sawdust, were grouped into the "wood" model unit fuel category and the emission tests matched to the "gas" model unit fuel category include tests for natural gas, process gas, coke oven gas, and landfill gas. Grouping the emissions data according to the model unit

Table 3-1. Compounds Selected to Develop Emission Factors

1,4-Dichlorobenzene	Hydrogen Fluoride
16-PAH	Lead
Acetaldehyde	m-Xylene
Acrolein	Manganese
Arsenic	Mercury
Benzene	Methyl Chloroform
Beryllium	Methyl Ethyl Ketone
Cadmium	Methylene Chloride
Chlorine	Nickel
Chromium	o-Xylene
Dibenzofuran	Phosphorus
Dibutylphthalate	Toluene
Dioxin	Xylenes
Ethylbenzene	PM
Formaldehyde	CO
Hexachlorobenzene	Sulfur Dioxide
Hydrogen Chloride	

fuel categories result in the development of average emission factors that represent the range and variability of emissions that could result from the types of boilers and process heaters assigned to the various model units.

The emission test data were then grouped by the control device types represented within each fuel group. The test reports often indicated several different add-on control devices that were specific to a single boiler. These control devices were grouped into more general control device categories that were consistent with the control levels developed for the model units (used to represent the existing population of boilers and process heaters). Many of the controls in the emission test database, such as low NO_x burners and over-fire air were not considered in grouping the emission test data because they are assumed to have no effect on HAP emissions.

However, some multiple control devices listed in test reports needed to be grouped in order to match model units. Most of these multiple controls were grouped according to the predominant control device that achieves the highest pollutant removal efficiencies. For example, a test report that represents a boiler with a mechanical cyclone and a fabric filter would be matched with the fabric filter control level because the fabric filter is the predominant control for particulate matter and metallic HAP and the resulting outlet emissions are assumed to be representative of the outlet emissions that would be achieved by a fabric filter alone. However, some multiple control devices were not grouped because the controls matched a typical control combination found in the existing population. For example, there are model units that represent units with particulate control and acid gas controls, such as a combination of wet scrubber and fabric filter. These control combinations found in the emission test database were matched with the similar model unit control levels.

3.3 Grouping of Pollutants to Develop Total Emissions per Test

Before average emission factors could be calculated for some pollutant categories, some of the emissions test data were grouped and summed further. For example, some emission tests had emissions data for condensible and filterable particulate matter from the same test. These two values were summed together to develop a total particulate matter value for the emissions test. Similar summations and groupings were done to develop total polychlorinated dibenzodioxin emissions, total polychlorinated dibenzofuran emissions, total 16-PAH (polycyclic aromatic hydrocarbons) emissions, and total mercury emissions.

Review of emissions test data for polychlorinated dibenzodioxin and polychlorinated dibenzofuran indicated that many of the test reports that contain dioxin/furan information provide data for specific individual isomers of dioxin/furan as well as data for groups of isomers, such as total tetrachlorodibenzodioxins (TCDD). Summing all these data points together would be incorrect because it would double-count emissions. In the development of average emission factors, all supporting dioxin/furan data was reviewed closely to include only non-duplicate isomers of dioxin/furan in the total sum for each individual test.

The emission test database contains emissions data specific to many different organic compounds, including the organic compounds that are included in the group polycyclic aromatic hydrocarbons (PAH). For development of emission factors for this pollutant group, the group of

sixteen of the polycyclic aromatic hydrocarbons, which is commonly referred to as 16-PAH, was calculated. The pollutants included in this grouping are as follows: acenaphthene, acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(e)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(ah)anthracene, fluoranthene, fluorene, ideno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. The emissions for each of these specific 16-PAH compounds were summed to develop a single 16-PAH emissions value for each emission test in the database.

The data available for use in the development of average mercury emission factors was also reviewed for potential duplication of emissions that were reported for the test, such as fractions of totals as well as total emissions. Also, any mercury compound emissions that are not measured by EPA Method 29 were removed from the sum total for an individual test.

4.0 AVERAGING AVAILABLE DATA TO DEVELOP EMISSION FACTORS

4.1 Averaging Emissions Test Data

Once all necessary summations were done, the pound per MMBtu heat input emission factors that were available in the emissions test database were averaged for each different combination of model unit fuel type, model unit control device, and pollutant of interest. For example, all the pound per MMBtu heat input emission factors available for each pollutant of interest for coal-fired boilers equipped with an electrostatic precipitator were averaged to develop average pound per MMBtu heat input emission factors for this type of unit.

The arithmetic mean of the data sets was used to develop the emission factors, as opposed to the median values of the data sets. The median values of each group of data were calculated and compared to the corresponding arithmetic means. In most cases, the resulting emission factors were very similar. Also, the standard deviations and distributions of each data set were reviewed and all the data sets appeared to follow a normal distribution pattern so that the arithmetic means are assumed to be an accurate representation of the typical emission rates of the various model units.

4.2 Results of Averaging Available Emissions Data to Develop Emission Factors

The analysis described in this section resulted in the development of unique emission factors that represented 69 different general model unit combinations based on fuel type and control level out of a total of 80 different model unit fuel type and control level combinations. Therefore, these emission factors represented approximately 85 percent of the total existing population of general model units. However, although at least one emission factor was available for 69 of the model fuel and control device combinations, for each of these combinations there are over 30 pollutants of interest for which emission factors were needed. The set of emission factors that resulted from simply averaging the available emissions test data resulted in coverage of only 30 percent of all the different combinations of model unit fuels, control levels, and pollutants of interest.

5.0 STANDARDIZATION METHODOLOGY AND FILLING DATA GAPS

5.1 Data Gaps and Inconsistencies in Emission Factors Based on Available Test Data

As indicated in Section 4.2, the resulting emission factors developed by averaging available test data that was specific to certain model unit fuel types, control devices and pollutants of interest only represented approximately 30 percent of the overall existing population of boilers and process heaters. For certain combinations of fuel type, control device, and pollutant there were extensive data gaps. Model units for non-fossil fuels had many gaps in emission factors because of the relatively small amount of non-fossil data available in the emissions test database. The extent of the data gaps would have made it very difficult to use this set of emission factors to develop accurate baseline emissions estimates and other emissions estimates because the data set was not representative of the entire existing population of sources.

Also, because there were a limited number of emission data points in the database for certain combinations of fuel types, control devices, and pollutants, many of the average emission factors developed using the methodology described in Section 4.0 were based on a small number of data points and were often very inconsistent. Many of the controlled emission factors for a particular fuel type were higher than uncontrolled emissions for the same fuel type. For example, because there might be a large number of emission tests for uncontrolled boilers burning coal but perhaps only one available emission test for a coal-fired boiler with a wet scrubber, the resulting

emission factors for the uncontrolled sources were often lower than the controlled boiler burning the same type of fuel. This inconsistency would have made it impossible to use these emission factors in any subsequent analysis for the NESHAP. Section 5.2 discusses the methodology used to standardize the emission factors.

5.2 Methodology for Standardizing Available Data and Filling Data Gaps

The emission test database includes much more controlled outlet emission test data than uncontrolled inlet test data and often the controlled outlet emissions data available for a particular fuel type did not span the wide range of control devices included in the existing population. For instance, the emission test database includes large amounts of data on some typical types of units such as coal-fired boilers with electrostatic precipitators while it often has little or no data on coal-fired boilers with other types of control devices. Since the model units used to represent the existing population are based not only on fuel type but also on control device level, the availability of actual test data for only a limited number of control devices resulted in extensive data gaps in the emission factors. However, most of the control devices represented in the emission test database are common control technologies for which control device rankings and typical efficiencies were developed for use in the MACT floor analysis. For more information on the control device rankings and typical efficiencies, refer to the memorandum, “*Methodology for Estimating Cost Impacts for the Industrial, Commercial, and Institutional Boiler and Process Heaters National Emission Standards for Hazardous Air Pollutants*”. After the initial steps discussed in Section 3.0 were completed, these typical control efficiencies were used to standardize the available emissions data, controlled and uncontrolled, for a particular fuel type to uncontrolled levels using the following equation:

$$\text{Uncontrolled Emission Factor} = (\text{Controlled Emission Factor}) \div [1 - (\% \text{ control efficiency}/100)]$$

Using this equation to convert all available emission test data to uncontrolled levels results in significant increases in emissions data available for each pollutant and fuel type. Once all emissions data was converted to uncontrolled levels, all the uncontrolled data points were averaged to develop average uncontrolled emission levels for each pollutant and fuel type combination.

The average uncontrolled levels developed for each pollutant and fuel type combination were then used as the starting point for developing the necessary emission factors for the various model units with different control devices. Again, using the typical control efficiencies developed along with the control device rankings⁵, the average uncontrolled emission levels for each pollutant and fuel type were converted to controlled emission levels specific to the particular control devices that exist on the various model units using the following equation:

$$\text{Controlled Emission Factor} = (\text{Uncontrolled emission factor}) \times [1 - (\% \text{ control efficiency} / 100)]$$

Using this equation, in combination with the standardized, uncontrolled emissions for each pollutant and fuel type, allowed the development of average emission factors for many more specific model units than could be developed by just averaging the available data points only. Also, this process helped to group more emission data points together based on fuel types so that more data points were available for each model unit fuel category. This resulted in more consistent emission factors in which controlled emissions were lower than uncontrolled emissions.

5.3 Results of Emission Factors Developed Using Standardization Methodology

The standardization methodology resulted in the development of average emission factors that represent approximately 100% of the general model unit fuel type and control level combinations developed to represent the existing population. There are no data gaps for specific control levels within each general model unit because of how the emission factors were developed using the standardization methodology. Most of the data gaps in the emission factors developed using the standardization methodology are specific to certain pollutants of interest for which there is very limited data. For instance, there is no controlled or uncontrolled data available for 1,4-dichlorobenzene, dibutylphthalate, hexachlorobenzene, or m-xylenes for entire model unit fuel type categories.

Once the standardized emission factors were developed, the availability of adequate emission factors was used as a basis for collapsing some of the more specific model units into common categories. The memorandum discussing the model unit development describes this in more detail.³

6.0 COMPARISON OF EMISSION FACTOR METHODOLOGIES

The emission factor methodology in which all emission data points were standardized to uncontrolled levels resulted in the ability to develop many more average emission factors to represent the control level model units. This standardization methodology also greatly reduced the inconsistencies between controlled and uncontrolled emission factors. Furthermore, the standardization methodology resulted in emission factors that were based on larger numbers of emission data points. Whereas, when just averaging the available test data for each different group might have resulted in emission factors that were based on a single data point, using the standardization methodology resulted in emission factors that are based on several different data points.

Because most of the control devices represented in the emissions database are common control devices that have consistent control efficiencies for various pollutants, it is assumed that using the typical control device efficiencies in the standardization methodology does not introduce a large margin of error. The emission factors developed by just averaging the available data (where there were many available test data points) were compared to the emission factors for the same model unit parameters developed using the standardization methodology. The differences in the results of the two methodologies in these cases was very slight, if any.

The main difference between the two methodologies is the larger number of emission factors that can be developed and the consistency that can be gained by using the standardization methodology. For these reasons, the emission factors used in subsequent analysis for this NESHAP were those developed using the standardization method as discussed in Section 5.2.

7.0 REVIEW AND VERIFICATION OF EMISSION FACTORS

Once the average emission factors were developed using the standardization methodology, additional review was conducted to ensure that the emission factors were consistent and representative of the specific model units. This review was done by comparing the emission factors that were grouped according to the type of fuel burned, by comparing emission factors that burn different fuel types but have similar controls, and by comparing the emission factors to published AP-42 emission factors⁴, when they were available.

First, emission factors specific to a certain fuel type but with different control technologies were compared to determine if there was consistency within these groups. For example, all the coal-fired boiler emission factors were compared to each other to ensure that the uncontrolled emissions were higher than the controlled emissions and that the controlled emission factors represented the range of control efficiencies expected from the various technologies. As previously indicated, the standardization method did not result in inconsistencies on this basis.

Second, emission factors for model units with different fuel types but with similar control devices were compared to each other. For example, a combination coal and gas-fired boiler uncontrolled emission factor was compared to a coal-fired boiler uncontrolled emission factor. If any unexpected differences were found, such as a the combination gas/coal emission factor for particulate matter being higher than a coal emission factor for particulate matter, all data points that contributed to the average emission factor were reviewed closely to identify possible outliers. In many of these cases, a single outlier data point was often the cause of this type of inconsistency. The test reports for any outliers identified were reviewed to determine if the operation of the boiler and control device were representative of the model unit or if there was some error in the raw data. In some cases, the concentration units associated with the raw test data had been transferred incorrectly when calculating the pound per MMBtu heat input emission factors. These data points were either adjusted accordingly, if possible, or removed from the emission factor analysis. Those data points that were removed from the analysis based on this review are documented in a “Lookup” table within the Boiler and Process Heater Emissions test database.¹ Sometimes, an outlier data point was found to be unrepresentative of a model unit fuel type and the average emission factors were adjusted. An example of this is the adjustments made to the emission factors for gas-fired model units. The majority of boilers and process heaters assigned to the gas-fired model units are those boilers that burn natural gas. However, boilers that burn gases such as landfill gas and biogas are also assigned to these model units and the available emissions data is included in the average emission factors. The emissions data from landfill gas often showed higher metallic HAP emissions than the emissions data from natural gas. So the emissions data from each type of gaseous fuel were weighted according to the percent of the total gas-fired units that burn each type of gaseous fuel in the existing population.

In this way, the emission factor is representative of the typical gas-fired boiler population which mostly burn natural gas.

Lastly, the average emission factors developed were compared to AP-42 emission factors for the same fuel types when comparable AP-42 emission factors were available. In cases where the average emission factors developed were significantly different than the corresponding AP-42 emission factors, the data points used to develop the average emission factor were reviewed to identify any outliers or other reasons for the difference. This review resulted in identifying some errors in the raw data that could be adjusted accordingly to result in more representative emission factors. However, this comparison to AP-42 also indicated that there were some differences that could be attributed to the initial exclusion of all non-detect test data from the average emission factors. Section 8.0 discusses the subsequent inclusion of non-detect data points in the average emission factor determinations.

8.0 INCLUSION OF NON-DETECT EMISSIONS DATA POINTS

Initially, in the development of average emission factors, data from tests with two or three non-detect runs were not included in the averages. However, average pound per MMBtu heat input emission factors were available in the emissions database for these tests. The calculation methodology was subsequently revised. The average emission factors for these tests in the emissions database were calculated by averaging in one half of the detection limit values for the test runs that were below the detection limit. The decision was made to develop the average emission factors for the model units including these non-detect emissions tests because not including these tests resulted in emission factors that were skewed toward the high end of the emissions range for some boilers. For example, for some combinations of fuel type, control device type, and pollutant type, there might be one test with results above detection limits but 10 tests with results below detection limits. If the non-detect tests were not included, the average emission factor would not be representative of typical emissions from that particular model unit.

The use of non-detect emissions test data could create some problems with developing average emission factors if the detection limits for the emissions test are relatively high. If detection limits were too high, then using one half the detection limit could result in emission levels from non-detect emissions tests appearing to be higher than emission levels from detect

tests. Once emission factors were developed that included the non-detect data points, these emission factors were compared to the previous set of emission factors to ensure that the inclusion of non-detect data did not increase any emission factors. This review determined that including the non-detect data did not increase the average emission factors.

Also, due to potential error that could be created by using non-detect test points with high detection limits, the emission factor analysis was reviewed to verify that no average emission factors were based solely on non-detect data. All average emission factors developed are based on detect data as well as non-detect emissions data. Furthermore, the grouping of emission tests that results from the standardization methodology further reduces the concern that non-detect data could result in unrepresentative emission factors.

9.0 REPRESENTATION OF PROCESS HEATERS

There is very limited test data available for process heaters in the EPA emission test database. As a result, average emission factors that are specific to process heaters only could not be developed. However, because the process heaters covered by this NESHAP only include indirect-fired process heaters whose emissions result only from the combustion of fuels, the boiler emission factors are assumed to be representative of comparable process heaters.

The process heaters in the existing population were assigned to the appropriate control level model units using the information available in the population database. For more information regarding these model unit assignments, refer to the memorandum “*Development of Model Units for the Industrial/Commercial/Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants*.”³ The majority of the process heaters in the existing population are fired with gaseous fuels and since there is quite a bit of emissions data available for gaseous fuel-fired boilers and the emissions from combustion of gas is not expected to vary greatly between boilers and process heaters⁶, the average emission factors developed for boilers are used to represent gaseous-fired process heaters, as well. The average emission factors developed for boilers were also used to represent those existing process heaters that burn fuel oils or wood/biomass fuels because the resulting emissions from the combustion of these fuels was assumed to be similar regardless of whether the fuel was burned in a boiler or process heater.

10.0 SUMMARY OF EMISSION FACTOR RESULTS

Using the standardization methodology resulted in the development of average emission factors for the control level model units that represents approximately 82 percent of the fuel type, control device, and pollutant combinations that are included in the existing population of boilers and process heaters. Most of the data gaps present in the set of emission factors exist because of lack of controlled and uncontrolled data for a few specific pollutants out of the 33 that were identified for developing emission factors.

The emission factors presented in Appendix A were used to represent the existing population of 283 specific control level model units for estimating baseline emissions, emission reductions, and cost impacts associated with meeting various emission levels for the entire existing population of boilers and process heaters.

11.0 DEVELOPMENT OF BASELINE EMISSIONS ESTIMATES

The average emission factors were used in combination with the model units used to represent the boiler and process heater population to develop baseline emission estimates for the industrial, commercial, and institutional boiler and process heater source category. The average emission factors, in lb pollutant emitted/MMBtu heat input, were multiplied by the average capacity of each model unit, in MMBtu/per hour heat input to develop the lb of each pollutant emitted per hour from a single boiler in each model unit category. This amount was then multiplied by hours of operation per year, model capacity factor, and the total number of units in the population that are mapped to each model unit. These totals were then summed to develop the national baseline emissions estimates for this source category. Appendix B presents the national baseline emissions estimates for this source category.

12.0 REFERENCES

1. Jeanette Alvis and Christy Burlew, ERG. Memorandum to Jim Eddinger, U.S. Environmental Protection Agency, OAQPS. *Development of the Emissions Test Database for the Industrial/ Commercial/Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants*. October, 2002.

2. Jeanette Alvis and Christy Burlew, ERG. Memorandum to Jim Eddinger, U.S. Environmental Protection Agency, OAQPS. *Development of the Population Database for the Industrial/ Commercial/Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants*. October, 2002.
3. Jeanette Alvis and Christy Burlew, ERG. Memorandum to Jim Eddinger, U.S. Environmental Protection Agency, OAQPS. *Development of Model Units for the Industrial/Commercial/Institutional Boilers and Process Heaters National Emission Standards for Hazardous Air Pollutants*. October, 2002.
4. U.S. Environmental Protection Agency, 1995. *Compilation of Air Pollutant Emission Factors (AP-42)*, Fifth Edition, Volume 1: Stationary and Point Sources, Chapter 1: External Combustion Sources.
5. Roy Oommen, ERG. Memorandum to Jim Eddinger, U.S. Environmental Protection Agency, OAQPS. *Methodology for Estimating Cost and Emissions Impacts for the Industrial, Commercial, and Institutional Boiler and Process Heaters National Emission Standard for Hazardous Air Pollutants*. October, 2002.
6. Petroleum Environmental Research Forum. Project 92-19. The Origin and Fate of Toxic Combustion Byproducts in Refinery Heaters and Boilers.

Appendix A

Average Emission Factors Developed for Control Level Model Units Using the Standardization Methodology

(See Excel spreadsheet “BaselineEFappxAB.xls”)

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
1a	Coal	Other	0-10	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
1b	Coal	Other	0-10	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
1c	Coal	Other	0-10	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
2a	Coal	Other	10-100	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
2b	Coal	Other	10-100	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
2c	Coal	Other	10-100	ESP	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 85E-02	2 30E-05
2d	Coal	Other	10-100	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
2e	Coal	Other	10-100	FF/DSI	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
2f	Coal	Other	10-100	FF/SD	9 49E-07	9 76E-06	2 28E-05	3 73E-06	2 09E-06	9 00E-06	1 76E-07	3 02E-07	2 06E-03	2 30E-06
2g	Coal	Other	10-100	Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 47E-04	1 16E-05	1 23E-05	2 12E-05	5 15E-03	1 61E-04
3a	Coal	Other	100-250	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
3b	Coal	Other	100-250	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
3c	Coal	Other	100-250	ESP	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 85E-02	2 30E-05
3d	Coal	Other	100-250	ESP/Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	5 15E-03	2 30E-05
3e	Coal	Other	100-250	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
3f	Coal	Other	100-250	FF/DSI	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
3g	Coal	Other	100-250	FF/Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	5 15E-03	2 30E-05
3h	Coal	Other	100-250	Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 47E-04	1 16E-05	1 23E-05	2 12E-05	5 15E-03	1 61E-04
4a	Coal	Other	>250	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
4b	Coal	Other	>250	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
4c	Coal	Other	>250	ESP	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 85E-02	2 30E-05
4d	Coal	Other	>250	ESP/DSI	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
4e	Coal	Other	>250	ESP/Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	5 15E-03	2 30E-05
4f	Coal	Other	>250	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
4g	Coal	Other	>250	FF/DSI	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
4h	Coal	Other	>250	FF/FSI	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
4i	Coal	Other	>250	FF/SD	9 49E-07	9 76E-06	2 28E-05	3 73E-06	2 09E-06	9 00E-06	1 76E-07	3 02E-07	2 06E-03	2 30E-06
4j	Coal	Other	>250	Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 47E-04	1 16E-05	1 23E-05	2 12E-05	5 15E-03	1 61E-04
5a	Coal	Wall-fired/PC	0-10	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
5b	Coal	Wall-fired/PC	0-10	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
6a	Coal	Wall-fired/PC	10-100	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
6b	Coal	Wall-fired/PC	10-100	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
6c	Coal	Wall-fired/PC	10-100	ESP	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 85E-02	2 30E-05
6d	Coal	Wall-fired/PC	10-100	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
6e	Coal	Wall-fired/PC	10-100	FF/DSI	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
6f	Coal	Wall-fired/PC	10-100	Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 47E-04	1 16E-05	1 23E-05	2 12E-05	5 15E-03	1 61E-04
7a	Coal	Wall-fired/PC	100-250	No Control	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 06E-02	2 30E-04
7b	Coal	Wall-fired/PC	100-250	Cyclone	1 36E-06	1 39E-05	3 26E-05	5 33E-06	1 88E-04	1 29E-05	1 58E-05	2 72E-05	2 06E-02	2 07E-04
7c	Coal	Wall-fired/PC	100-250	Cyclone/Venturi/Packed	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 05E-04	1 16E-05	8 80E-06	1 51E-05	2 06E-04	1 15E-04
7d	Coal	Wall-fired/PC	100-250	ESP	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 85E-02	2 30E-05
7e	Coal	Wall-fired/PC	100-250	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
7f	Coal	Wall-fired/PC	100-250	FF/SD	9 49E-07	9 76E-06	2 28E-05	3 73E-06	2 09E-06	9 00E-06	1 76E-07	3 02E-07	2 06E-03	2 30E-06
7g	Coal	Wall-fired/PC	100-250	FF/Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	5 15E-03	2 30E-05
7h	Coal	Wall-fired/PC	100-250	Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 47E-04	1 16E-05	1 23E-05	2 12E-05	5 15E-03	1 61E-04

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	1,4-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
8a	Coal	Wall-fired/PC	>250	No Control	1 36E-06	1 33E-05	3 26E-05	5 33E-06	2 09E-04	1 29E-05	1 76E-05	3 02E-05	2 08E-02	2 30E-04
8c	Coal	Wall-fired/PC	>250	ESP	1 36E-06	1 39E-05	3 26E-05	5 33E-06	2 09E-05	1 29E-05	1 76E-06	3 02E-06	1 85E-02	2 30E-05
8d	Coal	Wall-fired/PC	>250	ESP/SD	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-07	6 05E-07	2 08E-03	4 60E-06
8e	Coal	Wall-fired/PC	>250	ESP/Venturi/Packed	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	2 08E-04	2 30E-05
8f	Coal	Wall-fired/PC	>250	ESP/Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	5 15E-03	2 30E-05
8g	Coal	Wall-fired/PC	>250	FF	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 44E-02	2 30E-05
8h	Coal	Wall-fired/PC	>250	FF/DSI	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	1 03E-02	2 30E-05
8i	Coal	Wall-fired/PC	>250	FF/SD	9 49E-07	9 76E-06	2 28E-05	3 73E-06	2 09E-06	9 00E-06	1 76E-07	3 02E-07	2 08E-03	2 30E-06
8j	Coal	Wall-fired/PC	>250	FF/Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	2 09E-05	1 16E-05	1 76E-06	3 02E-06	5 15E-03	2 30E-05
8k	Coal	Wall-fired/PC	>250	Wet Scrubber	1 22E-06	1 25E-05	2 93E-05	4 80E-06	1 47E-04	1 16E-05	1 76E-06	3 02E-06	5 15E-03	1 61E-04
9a	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	No Control		3 61E-05	1 65E-03	8 44E-04	5 34E-05	3 34E-03	1 93E-06	7 17E-06	3 92E-03	1 21E-04
9b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone		3 61E-05	1 65E-03	8 44E-04	4 81E-05	3 34E-03	1 73E-06	6 45E-06	3 92E-03	1 09E-04
10a	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	No Control		3 61E-05	1 65E-03	8 44E-04	5 34E-05	3 34E-03	1 93E-06	7 17E-06	3 92E-03	1 21E-04
10b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone		3 61E-05	1 65E-03	8 44E-04	4 81E-05	3 34E-03	1 73E-06	6 45E-06	3 92E-03	1 09E-04
10c	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	ESP		3 61E-05	1 65E-03	8 44E-04	5 34E-06	3 34E-03	1 93E-07	7 17E-07	3 53E-03	1 21E-05
11a	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Cyclone		3 61E-05	1 65E-03	8 44E-04	4 81E-05	3 34E-03	1 73E-06	6 45E-06	3 92E-03	1 09E-04
11b	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	ESP		3 61E-05	1 65E-03	8 44E-04	5 34E-06	3 34E-03	1 93E-07	7 17E-07	3 53E-03	1 21E-05
11c	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber		3 25E-05	1 48E-03	7 60E-04	3 74E-05	3 00E-03	1 93E-06	5 02E-06	9 80E-04	8 49E-05
11d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF		3 25E-05	1 48E-03	7 60E-04	5 34E-06	3 00E-03	1 93E-07	7 17E-07	2 74E-03	1 21E-05
12a	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone		3 61E-05	1 65E-03	8 44E-04	4 81E-05	3 34E-03	1 73E-06	6 45E-06	3 92E-03	1 09E-04
12b	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone/Venturi/Packed		3 25E-05	1 48E-03	7 60E-04	2 67E-05	3 00E-03	1 93E-06	5 02E-06	9 80E-04	8 49E-05
12c	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP		3 61E-05	1 65E-03	8 44E-04	5 34E-06	3 34E-03	1 93E-07	7 17E-07	3 53E-03	1 21E-05
12d	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/FSI		3 61E-05	1 65E-03	8 44E-04	5 34E-06	3 34E-03	1 93E-07	7 17E-07	1 98E-03	1 21E-05
12e	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/SD		3 25E-05	1 48E-03	7 60E-04	1 07E-06	3 00E-03	1 93E-07	7 17E-07	3 92E-04	2 42E-06
12f	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF		3 25E-05	1 48E-03	7 60E-04	5 34E-06	3 00E-03	1 93E-07	7 17E-07	2 74E-03	1 21E-05
12g	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/FSI		3 25E-05	1 48E-03	7 60E-04	5 34E-06	3 00E-03	1 93E-07	7 17E-07	1 98E-03	1 21E-05
12h	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/Wet Scrubber		3 25E-05	1 48E-03	7 60E-04	5 34E-06	3 00E-03	1 93E-07	7 17E-07	9 80E-04	8 49E-05
12i	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Wet Scrubber		3 25E-05	1 48E-03	7 60E-04	3 74E-05	3 00E-03	1 93E-07	7 17E-07	9 80E-04	8 49E-05
13a	Gas	Other	0-10	No Control		1 26E-04	1 86E-04	9 67E-06	1 65E-06	1 50E-06		1 21E-06		1 40E-06
13b	Gas	Other	0-10	Cyclone		1 26E-04	1 86E-04	9 67E-06	1 49E-06	1 50E-06		1 09E-06		1 26E-06
13c	Gas	Other	0-10	ESP		1 26E-04	1 86E-04	9 67E-06	1 65E-07	1 50E-06		1 21E-07		1 40E-07
13d	Gas	Other	0-10	FF		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		1 21E-07		1 40E-07
13e	Gas	Other	0-10	FF/DSI		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		1 21E-07		1 40E-07
13f	Gas	Other	0-10	FF/Wet Scrubber		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		1 21E-07		1 40E-07
13g	Gas	Other	0-10	Venturi/Packed		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		1 21E-07		1 40E-07
13h	Gas	Other	0-10	Wet Scrubber		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		8 50E-07		9 78E-07
14a	Gas	Other	10-100	No Control		1 26E-04	1 86E-04	9 67E-06	1 65E-06	1 50E-06		1 21E-06		1 40E-06
14b	Gas	Other	10-100	Cyclone		1 26E-04	1 86E-04	9 67E-06	1 49E-06	1 50E-06		1 09E-06		1 26E-06
14c	Gas	Other	10-100	ESP		1 26E-04	1 86E-04	9 67E-06	1 65E-07	1 50E-06		1 21E-07		1 40E-07
14d	Gas	Other	10-100	FF		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		1 21E-07		1 40E-07
14e	Gas	Other	10-100	FF/Wet Scrubber		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		1 21E-07		1 40E-07
14f	Gas	Other	10-100	Wet Scrubber		1 13E-04	1 67E-04	8 70E-06	1 65E-07	1 35E-06		8 50E-07		9 78E-07

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	1,4-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
15a	Gas	Other	100-250	No Control		1.26E-04	1.86E-04	9.67E-06	1.65E-06	1.50E-06		1.21E-06		1.40E-06
15b	Gas	Other	100-250	Cyclone		1.26E-04	1.86E-04	9.67E-06	1.49E-06	1.50E-06		1.09E-06		1.26E-06
15c	Gas	Other	100-250	ESP		1.26E-04	1.86E-04	9.67E-06	1.50E-07	1.50E-06		1.21E-07		1.40E-07
15d	Gas	Other	100-250	ESP/Wet Scrubber		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		1.21E-07		1.40E-07
15e	Gas	Other	100-250	FF		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		1.21E-07		1.40E-07
15f	Gas	Other	100-250	Wet Scrubber		1.13E-04	1.67E-04	8.70E-06	1.16E-06	1.35E-06		8.50E-07		9.78E-07
16a	Gas	Other	>250	No Control		1.26E-04	1.86E-04	9.67E-06	1.65E-06	1.50E-06		1.21E-06		1.40E-06
16b	Gas	Other	>250	Cyclone		1.26E-04	1.86E-04	9.67E-06	1.49E-06	1.50E-06		1.09E-06		1.26E-06
16c	Gas	Other	>250	ESP		1.26E-04	1.86E-04	9.67E-06	1.65E-07	1.50E-06		1.21E-07		1.40E-07
16d	Gas	Other	>250	Wet Scrubber		1.13E-04	1.67E-04	8.70E-06	1.16E-06	1.35E-06		8.50E-07		9.78E-07
17a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-06	9.46E-03	1.08E-07	5.17E-06	1.74E-04	2.61E-05
17b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.02E-06	9.46E-03	9.72E-08	4.65E-06	1.74E-04	2.35E-05
17c	Gas/Wood/Other Biomass/Liquid FF	All	0-10	FF	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	1.22E-04	2.61E-06
17d	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	1.57E-06	8.52E-03	7.56E-08	3.62E-06	4.36E-05	1.83E-05
18a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-06	9.46E-03	1.08E-07	5.17E-06	1.74E-04	2.61E-05
18b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.02E-06	9.46E-03	9.72E-08	4.65E-06	1.74E-04	2.35E-05
18c	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-07	9.46E-03	1.08E-08	5.17E-07	1.57E-04	2.61E-06
18d	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP/Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	4.36E-05	2.61E-06
18e	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	1.22E-04	2.61E-06
18f	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF/Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	4.36E-05	2.61E-06
18g	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	1.57E-06	8.52E-03	7.56E-08	3.62E-06	4.36E-05	1.83E-05
19b	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.02E-06	9.46E-03	9.72E-08	4.65E-06	1.74E-04	2.35E-05
19c	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone/Venturi/Packed	1.19E-05	1.01E-04	3.18E-04	4.37E-05	1.12E-06	8.52E-03	5.40E-08	2.58E-06	1.74E-04	1.31E-05
19d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-07	9.46E-03	1.08E-08	5.17E-07	1.57E-04	2.61E-06
19e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	4.36E-05	2.61E-06
19f	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	1.57E-06	8.52E-03	7.56E-08	3.62E-06	4.36E-05	1.83E-05
20a	Gas/Wood/Other Biomass/Liquid FF	All	>250	Cyclone	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.02E-06	9.46E-03	9.72E-08	4.65E-06	1.74E-04	2.35E-05
20b	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-07	9.46E-03	1.08E-08	5.17E-07	1.57E-04	2.61E-06
20c	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP/Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	4.36E-05	2.61E-06
20d	Gas/Wood/Other Biomass/Liquid FF	All	>250	FF	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	1.22E-04	2.61E-06
20e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	1.57E-06	8.52E-03	7.56E-08	3.62E-06	4.36E-05	1.83E-05
21a	Distillate Liquid FF	All	0-10	No Control		5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
21b	Distillate Liquid FF	All	0-10	Cyclone		5.19E-05	2.03E-05	9.92E-06	5.42E-07	1.55E-05	1.99E-07	1.99E-07	2.16E-03	6.58E-07
21d	Distillate Liquid FF	All	0-10	FF		4.67E-05	1.83E-05	8.93E-06	6.03E-08	1.40E-05	2.22E-08	2.22E-08	1.51E-03	7.31E-08
21e	Distillate Liquid FF	All	0-10	Wet Scrubber		4.67E-05	1.83E-05	8.93E-06	4.22E-07	1.40E-05	1.55E-07	1.55E-07	5.41E-04	5.12E-07
22a	Distillate Liquid FF	All	10-100	No Control		5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
22b	Distillate Liquid FF	All	10-100	Cyclone		5.19E-05	2.03E-05	9.92E-06	5.42E-07	1.55E-05	1.99E-07	1.99E-07	2.16E-03	6.58E-07
22c	Distillate Liquid FF	All	10-100	ESP		5.19E-05	2.03E-05	9.92E-06	6.03E-08	1.55E-05	2.22E-08	2.22E-08	1.95E-03	7.31E-08
22d	Distillate Liquid FF	All	10-100	FF		4.67E-05	1.83E-05	8.93E-06	6.03E-08	1.40E-05	2.22E-08	2.22E-08	1.51E-03	7.31E-08
22g	Distillate Liquid FF	All	10-100	Wet Scrubber		4.67E-05	1.83E-05	8.93E-06	4.22E-07	1.40E-05	1.55E-07	1.55E-07	5.41E-04	5.12E-07
23a	Distillate Liquid FF	All	100-250	No Control		5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
23b	Distillate Liquid FF	All	100-250	Cyclone		5.19E-05	2.03E-05	9.92E-06	5.42E-07	1.55E-05	1.99E-07	1.99E-07	2.16E-03	6.58E-07
23d	Distillate Liquid FF	All	100-250	FF		4.67E-05	1.83E-05	8.93E-06	6.03E-08	1.40E-05	2.22E-08	2.22E-08	1.51E-03	7.31E-08
23f	Distillate Liquid FF	All	100-250	Wet Scrubber		4.67E-05	1.83E-05	8.93E-06	4.22E-07	1.40E-05	1.55E-07	1.55E-07	5.41E-04	5.12E-07
24a	Distillate Liquid FF	All	>250	No Control		5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
24d	Distillate Liquid FF	All	>250	ESP		5.19E-05	2.03E-05	9.92E-06	6.03E-08	1.55E-05	2.22E-08	2.22E-08	1.95E-03	7.31E-08

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
25a	NFF Liquid/NFF Solid/Gas	All	0-10	No Control		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.28E-04
25b	NFF Liquid/NFF Solid/Gas	All	0-10	Cyclone		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.15E-04
26a	NFF Liquid/NFF Solid/Gas	All	10-100	No Control		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.28E-04
26b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.15E-04
26c	NFF Liquid/NFF Solid/Gas	All	10-100	ESP		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.28E-05
26d	NFF Liquid/NFF Solid/Gas	All	10-100	FF		2.20E-05	2.47E-05	1.13E-04	1.40E-07	1.27E-05		3.95E-07		1.28E-05
26e	NFF Liquid/NFF Solid/Gas	All	10-100	FF/SD		1.71E-05	1.92E-05	8.75E-05	1.40E-08	9.91E-06		3.95E-08		1.28E-05
26f	NFF Liquid/NFF Solid/Gas	All	10-100	Wet Scrubber		2.20E-05	2.47E-05	1.13E-04	9.83E-07	1.27E-05		2.76E-06		8.94E-05
27a	NFF Liquid/NFF Solid/Gas	All	100-250	No Control		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.28E-04
27b	NFF Liquid/NFF Solid/Gas	All	100-250	ESP		2.44E-05	2.74E-05	1.25E-04	1.40E-07	1.42E-05		3.95E-07		1.28E-05
27c	NFF Liquid/NFF Solid/Gas	All	100-250	ESP/Wet Scrubber		2.20E-05	2.47E-05	1.13E-04	1.40E-07	1.27E-05		3.95E-07		1.28E-05
27d	NFF Liquid/NFF Solid/Gas	All	100-250	FF		2.20E-05	2.47E-05	1.13E-04	1.40E-07	1.27E-05		3.95E-07		1.28E-05
27e	NFF Liquid/NFF Solid/Gas	All	100-250	Cyclone		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.15E-04
27f	NFF Liquid/NFF Solid/Gas	All	100-250	Wet Scrubber		2.20E-05	2.47E-05	1.13E-04	9.83E-07	1.27E-05		2.76E-06		8.94E-05
28a	NFF Liquid/NFF Solid/Gas	All	>250	No Control		2.44E-05	2.74E-05	1.25E-04	1.40E-06	1.42E-05		3.95E-06		1.28E-04
28b	NFF Liquid/NFF Solid/Gas	All	>250	ESP		2.44E-05	2.74E-05	1.25E-04	1.40E-07	1.42E-05		3.95E-07		1.28E-05
28c	NFF Liquid/NFF Solid/Gas	All	>250	Wet Scrubber		2.20E-05	2.47E-05	1.13E-04	9.83E-07	1.27E-05		2.76E-06		8.94E-05
29a	Wood	Other	0-10	No Control		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
29b	Wood	Other	0-10	Cyclone		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
29c	Wood	Other	0-10	FF		7.34E-08	6.53E-05	1.71E-02	1.54E-03	3.55E-06	4.51E-03	4.59E-07	2.94E-04	3.61E-06
30a	Wood	Other	10-100	No Control		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
30b	Wood	Other	10-100	Cyclone		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
30c	Wood	Other	10-100	ESP		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-06	5.01E-03	4.59E-07	3.78E-04	3.61E-06
30d	Wood	Other	10-100	FF		7.34E-08	6.53E-05	1.71E-02	1.54E-03	3.55E-06	4.51E-03	4.59E-07	2.94E-04	3.61E-06
30e	Wood	Other	10-100	Wet Scrubber		7.34E-08	6.53E-05	1.71E-02	1.54E-03	2.48E-05	4.51E-03	3.21E-06	1.05E-04	2.52E-05
31a	Wood	Other	100-250	No Control		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
31b	Wood	Other	100-250	Cyclone		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
31c	Wood	Other	100-250	Cyclone/Venturi/Packed		7.34E-08	6.53E-05	1.71E-02	1.54E-03	3.55E-06	4.51E-03	4.59E-07	2.94E-04	3.61E-06
31d	Wood	Other	100-250	ESP		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-06	5.01E-03	4.59E-07	3.78E-04	3.61E-06
31e	Wood	Other	100-250	Wet Scrubber		7.34E-08	6.53E-05	1.71E-02	1.54E-03	2.48E-05	4.51E-03	3.21E-06	1.05E-04	2.52E-05
32a	Wood	Other	>250	No Control		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
32b	Wood	Other	>250	Cyclone		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
32c	Wood	Other	>250	ESP		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-06	5.01E-03	4.59E-07	3.78E-04	3.61E-06
32d	Wood	Other	>250	Wet Scrubber		7.34E-08	6.53E-05	1.71E-02	1.54E-03	2.48E-05	4.51E-03	3.21E-06	1.05E-04	2.52E-05
33a	Wood	Wall-fired/PC	0-10	No Control		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
33b	Wood	Wall-fired/PC	0-10	Cyclone		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
34a	Wood	Wall-fired/PC	10-100	No Control		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
34b	Wood	Wall-fired/PC	10-100	Cyclone		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-05	5.01E-03	4.59E-06	4.19E-04	3.61E-05
34c	Wood	Wall-fired/PC	10-100	FF		7.34E-08	6.53E-05	1.71E-02	1.54E-03	3.55E-06	4.51E-03	4.59E-07	2.94E-04	3.61E-06
34d	Wood	Wall-fired/PC	10-100	Wet Scrubber		7.34E-08	6.53E-05	1.71E-02	1.54E-03	2.48E-05	4.51E-03	3.21E-06	1.05E-04	2.52E-05
35a	Wood	Wall-fired/PC	>250	ESP		8.16E-08	7.26E-05	1.90E-02	1.71E-03	3.55E-06	5.01E-03	4.59E-07	3.78E-04	3.61E-06
35b	Wood	Wall-fired/PC	>250	ESP/Wet Scrubber		7.34E-08	6.53E-05	1.71E-02	1.54E-03	3.55E-06	4.51E-03	4.59E-07	2.94E-04	3.61E-06
36a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control		2.40E-05	1.60E-05	9.47E-06	5.01E-05	1.37E-04	1.57E-05	3.54E-05	1.83E-04	8.80E-04
36b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Cyclone		2.40E-05	1.60E-05	9.47E-06	5.01E-05	1.37E-04	1.57E-05	3.54E-05	1.83E-04	8.80E-04
36c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	ESP		2.40E-05	1.60E-05	9.47E-06	5.01E-06	1.37E-04	1.57E-05	3.54E-05	1.83E-04	8.80E-04
36e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Wet Scrubber		2.16E-05	1.44E-05	8.52E-06	3.51E-05	1.23E-04	1.10E-05	2.48E-05	4.58E-05	6.16E-04

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	1,4-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
37a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	No Control		2 40E-05	1 60E-05	9 47E-06	5 01E-05	1 37E-04	1 57E-05	3 54E-05	1 83E-04	8 80E-04
37b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone		2 40E-05	1 60E-05	9 47E-06	4 51E-05	1 37E-04	1 41E-05	3 19E-05	1 83E-04	7 92E-04
37c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone/Venturi/Packed		2 10E-05	1 44E-05	8 52E-06	2 51E-05	1 23E-04	7 85E-06	1 77E-05	1 83E-06	4 40E-04
37d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP		2 40E-05	1 60E-05	9 47E-06	5 01E-06	1 37E-04	1 57E-06	3 54E-06	1 66E-04	8 80E-05
37e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	FF		2 16E-05	1 44E-05	8 52E-06	5 01E-06	1 23E-04	1 57E-06	3 54E-06	1 28E-04	8 80E-05
37f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Wet Scrubber		2 16E-05	1 44E-05	8 52E-06	5 01E-05	1 23E-04	1 10E-05	2 48E-05	4 58E-05	6 16E-04
38a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone		2 40E-05	1 60E-05	9 47E-06	4 51E-05	1 37E-04	1 41E-05	3 19E-05	1 83E-04	7 92E-04
38b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone/Venturi/Packed		2 10E-05	1 44E-05	8 52E-06	2 51E-05	1 23E-04	7 85E-06	1 77E-05	1 83E-06	4 40E-04
38c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	ESP		2 40E-05	1 60E-05	9 47E-06	5 01E-06	1 37E-04	1 57E-06	3 54E-06	1 66E-04	8 80E-05
38d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF		2 16E-05	1 44E-05	8 52E-06	5 01E-06	1 23E-04	1 57E-06	3 54E-06	1 28E-04	8 80E-05
38e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/FSI		2 16E-05	1 44E-05	8 52E-06	5 01E-06	1 23E-04	1 57E-06	3 54E-06	9 16E-05	8 80E-05
38f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/Wet Scrubber		2 16E-05	1 44E-05	8 52E-06	5 01E-06	1 23E-04	1 57E-06	3 54E-06	4 58E-05	8 80E-05
38g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber		2 16E-05	1 44E-05	8 52E-06	3 51E-05	1 23E-04	1 10E-05	2 48E-05	4 58E-05	6 16E-04
39a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	No Control		2 40E-05	1 60E-05	9 47E-06	5 01E-05	1 37E-04	1 57E-05	3 54E-05	1 83E-04	8 80E-04
39b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Cyclone		2 40E-05	1 60E-05	9 47E-06	4 51E-05	1 37E-04	1 41E-05	3 19E-05	1 83E-04	7 92E-04
39c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP		2 40E-05	1 60E-05	9 47E-06	5 01E-06	1 37E-04	1 57E-06	3 54E-06	1 66E-04	8 80E-05
39e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP/Wet Scrubber		2 16E-05	1 44E-05	8 52E-06	5 01E-06	1 23E-04	1 57E-06	3 54E-06	4 58E-05	8 80E-05
39f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	FF		2 16E-05	1 44E-05	8 52E-06	5 01E-06	1 23E-04	1 57E-06	3 54E-06	1 28E-04	8 80E-05
39g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Wet Scrubber		2 16E-05	1 44E-05	8 52E-06	3 51E-05	1 23E-04	1 10E-05	2 48E-05	4 58E-05	6 16E-04
40a	Residual Liquid FF	All	0-10	No Control		2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	1 12E-06	6 14E-06	2 16E-03	3 14E-05
40b	Residual Liquid FF	All	0-10	Cyclone		2 14E-05	2 03E-05	9 92E-06	4 84E-06	9 21E-06	1 01E-06	5 53E-06	2 16E-03	2 83E-05
40d	Residual Liquid FF	All	0-10	FF		1 93E-05	1 83E-05	8 93E-06	5 38E-07	8 29E-06	1 12E-07	6 14E-07	1 51E-03	3 14E-06
41a	Residual Liquid FF	All	10-100	No Control		2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	1 12E-06	6 14E-06	2 16E-03	3 14E-05
41b	Residual Liquid FF	All	10-100	Cyclone		2 14E-05	2 03E-05	9 92E-06	4 84E-06	9 21E-06	1 01E-06	5 53E-06	2 16E-03	2 83E-05
41c	Residual Liquid FF	All	10-100	ESP		2 14E-05	2 03E-05	9 92E-06	5 38E-07	9 21E-06	1 12E-07	6 14E-07	1 95E-03	3 14E-06
41d	Residual Liquid FF	All	10-100	FF		1 93E-05	1 83E-05	8 93E-06	5 38E-07	8 29E-06	1 12E-07	6 14E-07	1 51E-03	3 14E-06
41g	Residual Liquid FF	All	10-100	Wet Scrubber		1 93E-05	1 83E-05	8 93E-06	3 76E-06	8 29E-06	7 84E-07	4 30E-06	5 41E-04	2 20E-05
42a	Residual Liquid FF	All	100-250	No Control		2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	1 12E-06	6 14E-06	2 16E-03	3 14E-05
42b	Residual Liquid FF	All	100-250	Cyclone		2 14E-05	2 03E-05	9 92E-06	4 84E-06	9 21E-06	1 01E-06	5 53E-06	2 16E-03	2 83E-05
42c	Residual Liquid FF	All	100-250	ESP		2 14E-05	2 03E-05	9 92E-06	5 38E-07	9 21E-06	1 12E-07	6 14E-07	1 95E-03	3 14E-06
42d	Residual Liquid FF	All	100-250	FF		1 93E-05	1 83E-05	8 93E-06	5 38E-07	8 29E-06	1 12E-07	6 14E-07	1 51E-03	3 14E-06
42e	Residual Liquid FF	All	100-250	Venturi/Packed		1 93E-05	1 83E-05	8 93E-06	2 69E-06	8 29E-06	5 60E-07	3 07E-06	2 16E-05	1 57E-05
42f	Residual Liquid FF	All	100-250	Wet Scrubber		1 93E-05	1 83E-05	8 93E-06	3 76E-06	8 29E-06	7 84E-07	4 30E-06	5 41E-04	2 20E-05
43a	Residual Liquid FF	All	>250	No Control		2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	1 12E-06	6 14E-06	2 16E-03	3 14E-05
43b	Residual Liquid FF	All	>250	Cyclone		2 14E-05	2 03E-05	9 92E-06	4 84E-06	9 21E-06	1 01E-06	5 53E-06	2 16E-03	2 83E-05
43d	Residual Liquid FF	All	>250	ESP		2 14E-05	2 03E-05	9 92E-06	5 38E-07	9 21E-06	1 12E-07	6 14E-07	1 95E-03	3 14E-06
44a	Bagasse/Other	All	10-100	Cyclone		1 32E-05	1 13E-04	3 54E-04	4 51E-05	9 46E-03	1 41E-05	3 19E-05	1 83E-04	7 92E-04
44b	Bagasse/Other	All	10-100	Wet Scrubber		1 19E-05	1 01E-04	3 18E-04	3 51E-05	8 52E-03	1 10E-05	2 48E-05	4 58E-05	6 16E-04
45a	Bagasse/Other	All	100-250	No Control		1 32E-05	1 13E-04	3 54E-04	4 51E-05	9 46E-03	1 41E-05	3 19E-05	1 83E-04	7 92E-04
45b	Bagasse/Other	All	100-250	Cyclone		1 32E-05	1 13E-04	3 54E-04	4 51E-05	9 46E-03	1 41E-05	3 19E-05	1 83E-04	7 92E-04
45c	Bagasse/Other	All	100-250	Wet Scrubber		1 19E-05	1 01E-04	3 18E-04	3 51E-05	8 52E-03	1 10E-05	2 48E-05	4 58E-05	6 16E-04
46a	Bagasse/Other	All	>250	ESP		1 32E-05	1 13E-04	3 54E-04	4 51E-05	9 46E-03	1 41E-05	3 19E-05	1 83E-04	7 92E-04
46b	Bagasse/Other	All	>250	ESP/Activated Carbon Adsorption		1 19E-05	1 01E-04	3 18E-04	4 37E-05	5 01E-06	8 52E-03	1 57E-06	1 65E-04	8 80E-05
46c	Bagasse/Other	All	>250	Wet Scrubber		1 19E-05	1 01E-04	3 18E-04	4 37E-05	5 01E-06	8 52E-03	1 57E-06	1 65E-04	8 80E-05

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	1,4-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
47a	Coal	Other	0-10	No Control	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-04	1.29E-05	1.76E-05	3.02E-05	2.08E-02	2.30E-04
48a	Coal	Other	10-100	No Control	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-04	1.29E-05	1.76E-05	3.02E-05	2.08E-02	2.30E-04
48b	Coal	Other	10-100	Cyclone	1.36E-06	1.39E-05	3.26E-05	5.33E-06	1.88E-04	1.29E-05	1.58E-05	2.72E-05	2.08E-02	2.07E-04
48c	Coal	Other	10-100	ESP	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-05	1.29E-05	1.76E-06	3.02E-06	1.85E-02	2.30E-05
48d	Coal	Other	10-100	FF	1.22E-06	1.25E-05	2.93E-05	4.80E-06	2.09E-05	1.16E-05	1.76E-06	3.02E-06	1.44E-02	2.30E-05
49b	Coal	Other	100-250	Cyclone	1.36E-06	1.39E-05	3.26E-05	5.33E-06	1.88E-04	1.29E-05	1.58E-05	2.72E-05	2.08E-02	2.07E-04
49c	Coal	Other	100-250	ESP	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-05	1.29E-05	1.76E-06	3.02E-06	1.85E-02	2.30E-05
50c	Coal	Other	>250	ESP	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-05	1.29E-05	1.76E-06	3.02E-06	1.85E-02	2.30E-05
50f	Coal	Other	>250	FF	1.22E-06	1.25E-05	2.93E-05	4.80E-06	2.09E-05	1.16E-05	1.76E-06	3.02E-06	1.44E-02	2.30E-05
52a	Coal	Wall-fired/PC	10-100	No Control	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-04	1.29E-05	1.76E-05	3.02E-05	2.08E-02	2.30E-04
52b	Coal	Wall-fired/PC	10-100	Cyclone	1.36E-06	1.39E-05	3.26E-05	5.33E-06	1.88E-04	1.29E-05	1.58E-05	2.72E-05	2.08E-02	2.07E-04
52f	Coal	Wall-fired/PC	10-100	Wet Scrubber	1.22E-06	1.25E-05	2.93E-05	4.80E-06	1.47E-04	1.16E-05	1.23E-05	2.12E-05	5.15E-03	1.61E-04
53b	Coal	Wall-fired/PC	100-250	Cyclone	1.36E-06	1.39E-05	3.26E-05	5.33E-06	1.88E-04	1.29E-05	1.58E-05	2.72E-05	2.08E-02	2.07E-04
53d	Coal	Wall-fired/PC	100-250	ESP	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-05	1.29E-05	1.76E-06	3.02E-06	1.85E-02	2.30E-05
54c	Coal	Wall-fired/PC	>250	ESP	1.36E-06	1.39E-05	3.26E-05	5.33E-06	2.09E-05	1.29E-05	1.76E-06	3.02E-06	1.85E-02	2.30E-05
55b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone		3.61E-05	1.65E-03	8.44E-04	4.81E-05	3.34E-03	1.73E-06	6.45E-06	3.92E-03	1.09E-04
56b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone		3.61E-05	1.65E-03	8.44E-04	4.81E-05	3.34E-03	1.73E-06	6.45E-06	3.92E-03	1.09E-04
57d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF		3.25E-05	1.48E-03	7.60E-04	5.34E-06	3.00E-03	1.93E-07	7.17E-07	2.74E-03	1.21E-05
58a	Gas	Other	0-10	No Control		1.26E-04	1.86E-04	9.67E-06	1.65E-06	1.50E-06		1.21E-06		1.40E-06
58d	Gas	Other	0-10	FF		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		1.21E-07		1.40E-07
58h	Gas	Other	0-10	Wet Scrubber		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		8.50E-07		9.78E-07
59a	Gas	Other	10-100	No Control		1.26E-04	1.86E-04	9.67E-06	1.65E-06	1.50E-06		1.21E-06		1.40E-06
59b	Gas	Other	10-100	Cyclone		1.26E-04	1.86E-04	9.67E-06	1.49E-06	1.50E-06		1.09E-06		1.26E-06
59d	Gas	Other	10-100	FF		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		1.21E-07		1.40E-07
59e	Gas	Other	10-100	FF/Wet Scrubber		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		1.21E-07		1.40E-07
59f	Gas	Other	10-100	Wet Scrubber		1.13E-04	1.67E-04	8.70E-06	1.65E-06	1.35E-06		8.50E-07		9.78E-07
60a	Gas	Other	100-250	No Control		1.26E-04	1.86E-04	9.67E-06	1.65E-06	1.50E-06		1.21E-06		1.40E-06
60b	Gas	Other	100-250	Cyclone		1.26E-04	1.86E-04	9.67E-06	1.49E-06	1.50E-06		1.09E-06		1.26E-06
60e	Gas	Other	100-250	FF		1.13E-04	1.67E-04	8.70E-06	1.65E-07	1.35E-06		1.21E-07		1.40E-07
61a	Gas	Other	>250	No Control		1.26E-04	1.86E-04	9.67E-06	1.65E-06	1.50E-06		1.21E-06		1.40E-06
62a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-06	9.46E-03	1.08E-07	5.17E-06	1.74E-04	2.61E-05
62b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.02E-06	9.46E-03	9.72E-08	4.65E-06	1.74E-04	2.35E-05
63a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-06	9.46E-03	1.08E-07	5.17E-06	1.74E-04	2.61E-05
63b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.02E-06	9.46E-03	9.72E-08	4.65E-06	1.74E-04	2.35E-05
64d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP	1.32E-05	1.13E-04	3.54E-04	4.85E-05	2.24E-07	9.46E-03	1.08E-08	5.17E-07	1.57E-04	2.61E-06
64e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	2.24E-07	8.52E-03	1.08E-08	5.17E-07	4.36E-05	2.61E-06
65e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber	1.19E-05	1.01E-04	3.18E-04	4.37E-05	1.57E-06	8.52E-03	7.56E-08	3.62E-06	4.36E-05	1.83E-05
66a	Distillate Liquid FF	All	0-10	No Control	5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
67a	Distillate Liquid FF	All	10-100	No Control	5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
67d	Distillate Liquid FF	All	10-100	FF	4.67E-05	1.83E-05	8.92E-06	6.03E-08	1.40E-05	2.22E-08	2.22E-08	2.22E-08	1.51E-03	7.31E-08
68a	Distillate Liquid FF	All	100-250	No Control	5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
69a	Distillate Liquid FF	All	>250	No Control	5.19E-05	2.03E-05	9.92E-06	6.03E-07	1.55E-05	1.55E-05	2.22E-07	2.22E-07	2.16E-03	7.31E-07
69d	Distillate Liquid FF	All	>250	ESP	5.19E-05	2.03E-05	9.92E-06	6.03E-08	1.40E-05	2.22E-08	2.22E-08	2.22E-08	1.95E-03	7.31E-08
70b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	2.44E-05	2.74E-05	1.25E-04	1.25E-04	1.26E-06	1.42E-05		3.55E-06		1.15E-04
72b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	2.44E-05	2.74E-05	1.25E-04	1.25E-04	1.40E-07	1.42E-05		3.95E-07		1.28E-05

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	1,4-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium
73a	Wood	Other	0-10	No Control	8 16E-08	7 26E-05	1 90E-02	1 71E-03	3 55E-05	5 01E-03	4 59E-06	9 13E-06	4 19E-04	3 61E-05
73b	Wood	Other	0-10	Cyclone	8 16E-08	7 26E-05	1 90E-02	1 71E-03	3 19E-05	5 01E-03	4 13E-06	8 22E-06	4 19E-04	3 25E-05
74a	Wood	Other	10-100	No Control	8 16E-08	7 26E-05	1 90E-02	1 71E-03	3 55E-05	5 01E-03	4 59E-06	9 13E-06	4 19E-04	3 61E-05
74b	Wood	Other	10-100	Cyclone	8 16E-08	7 26E-05	1 90E-02	1 71E-03	3 19E-05	5 01E-03	4 13E-06	8 22E-06	4 19E-04	3 25E-05
74c	Wood	Other	10-100	Wet Scrubber	7 34E-08	6 53E-05	1 71E-02	1 54E-03	2 48E-05	4 51E-03	3 21E-06	6 39E-06	1 05E-04	2 52E-05
75e	Wood	Other	100-250	Wet Scrubber	7 34E-08	6 53E-05	1 71E-02	1 54E-03	2 48E-05	4 51E-03	3 21E-06	6 39E-06	1 05E-04	2 52E-05
76b	Wood	Wall-fired/PC	0-10	Cyclone	8 16E-08	7 26E-05	1 90E-02	1 71E-03	3 19E-05	5 01E-03	4 13E-06	8 22E-06	4 19E-04	3 25E-05
77b	Wood	Wall-fired/PC	10-100	Cyclone	8 16E-08	7 26E-05	1 90E-02	1 71E-03	3 19E-05	5 01E-03	4 13E-06	8 22E-06	4 19E-04	3 25E-05
78a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control			1 60E-05	9 47E-06	5 01E-05	1 37E-04	1 57E-05	3 54E-05	1 83E-04	8 80E-04
79b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone			1 60E-05	9 47E-06	5 01E-05	1 37E-04	1 57E-05	3 54E-05	1 83E-04	8 80E-04
79d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP			1 60E-05	9 47E-06	5 01E-05	1 37E-04	1 57E-05	3 54E-05	1 83E-04	8 80E-04
80a	Residual Liquid FF	All	0-10	No Control			2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	6 14E-06	2 16E-03	3 14E-05
81a	Residual Liquid FF	All	10-100	No Control			2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	6 14E-06	2 16E-03	3 14E-05
81g	Residual Liquid FF	All	10-100	Wet Scrubber			1 93E-05	1 83E-05	8 93E-06	3 76E-06	8 29E-06	4 30E-06	5 41E-04	2 20E-05
82a	Residual Liquid FF	All	100-250	No Control			2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	6 14E-06	2 16E-03	3 14E-05
83a	Residual Liquid FF	All	>250	No Control			2 14E-05	2 03E-05	9 92E-06	5 38E-06	9 21E-06	6 14E-06	2 16E-03	3 14E-05

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
1a	Coal	Other	0-10	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
1b	Coal	Other	0-10	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
1c	Coal	Other	0-10	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
2a	Coal	Other	10-100	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
2b	Coal	Other	10-100	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
2c	Coal	Other	10-100	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-05	
2d	Coal	Other	10-100	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
2e	Coal	Other	10-100	FF/DSI	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		2.68E-02	1.95E-03	2.94E-05	
2f	Coal	Other	10-100	FF/SD	2.52E-09	2.51E-06	1.57E-09	1.12E-06	1.29E-05		5.35E-03	3.89E-04	2.94E-06	
2g	Coal	Other	10-100	Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.06E-04	
3a	Coal	Other	100-250	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
3b	Coal	Other	100-250	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
3c	Coal	Other	100-250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
3d	Coal	Other	100-250	ESP/Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.94E-05	
3e	Coal	Other	100-250	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
3f	Coal	Other	100-250	FF/DSI	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		2.68E-02	1.95E-03	2.94E-05	
3g	Coal	Other	100-250	FF/Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.94E-05	
3h	Coal	Other	100-250	Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.06E-04	
4a	Coal	Other	>250	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
4b	Coal	Other	>250	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
4c	Coal	Other	>250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
4d	Coal	Other	>250	ESP/DSI	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		2.68E-02	1.95E-03	2.94E-05	
4e	Coal	Other	>250	ESP/Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.94E-05	
4f	Coal	Other	>250	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
4g	Coal	Other	>250	FF/DSI	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		2.68E-02	1.95E-03	2.94E-05	
4h	Coal	Other	>250	FF/FSI	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		2.68E-02	1.95E-03	2.94E-05	
4i	Coal	Other	>250	FF/SD	2.52E-09	2.51E-06	1.57E-09	1.12E-06	1.29E-05		5.35E-03	3.89E-04	2.94E-06	
4j	Coal	Other	>250	Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.06E-04	
5a	Coal	Wall-fired/PC	0-10	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
5b	Coal	Wall-fired/PC	0-10	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
6a	Coal	Wall-fired/PC	10-100	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
6b	Coal	Wall-fired/PC	10-100	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
6c	Coal	Wall-fired/PC	10-100	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
6d	Coal	Wall-fired/PC	10-100	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
6e	Coal	Wall-fired/PC	10-100	FF/DSI	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		2.68E-02	1.95E-03	2.94E-05	
6f	Coal	Wall-fired/PC	10-100	Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.06E-04	
7a	Coal	Wall-fired/PC	100-250	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
7b	Coal	Wall-fired/PC	100-250	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
7c	Coal	Wall-fired/PC	100-250	Cyclone/Venturi/Packed	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	3.89E-05	1.47E-04	
7d	Coal	Wall-fired/PC	100-250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
7e	Coal	Wall-fired/PC	100-250	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
7f	Coal	Wall-fired/PC	100-250	FF/SD	2.52E-09	2.51E-06	1.57E-09	1.12E-06	1.29E-05		5.35E-03	3.89E-04	2.94E-06	
7g	Coal	Wall-fired/PC	100-250	FF/Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.94E-05	
7h	Coal	Wall-fired/PC	100-250	Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.06E-04	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	DiButylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
8a	Coal	Wall-fired/PC	>250	No Control	3 59E-09	3 59E-06	2 25E-09	1 60E-06	1 85E-05		5 35E-02	3 89E-03	2 94E-04	
8c	Coal	Wall-fired/PC	>250	ESP	3 59E-09	3 59E-06	2 25E-09	1 60E-06	1 85E-05		5 35E-02	3 89E-03	2 94E-05	
8d	Coal	Wall-fired/PC	>250	ESP/SD	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		5 35E-03	3 89E-04	5 89E-06	
8e	Coal	Wall-fired/PC	>250	ESP/Venturi/Packed	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		5 35E-04	3 89E-05	2 94E-05	
8f	Coal	Wall-fired/PC	>250	ESP/Wet Scrubber	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		5 35E-02	2 73E-03	2 94E-05	
8g	Coal	Wall-fired/PC	>250	FF	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		5 35E-02	2 73E-03	2 94E-05	
8h	Coal	Wall-fired/PC	>250	FF/DSI	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		2 68E-02	1 95E-03	2 94E-05	
8i	Coal	Wall-fired/PC	>250	FF/SD	2 52E-09	2 51E-06	1 57E-09	1 12E-06	1 29E-05		5 35E-03	3 89E-04	2 94E-06	
8j	Coal	Wall-fired/PC	>250	FF/Wet Scrubber	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		1 34E-02	9 74E-04	2 94E-05	
8k	Coal	Wall-fired/PC	>250	Wet Scrubber	3 23E-09	3 23E-06	2 02E-09	1 44E-06	1 66E-05		1 34E-02	9 74E-04	2 06E-04	
9a	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	No Control	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 16E-02	1 43E-04	
9b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 16E-02	1 29E-04	
10a	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	No Control	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 16E-02	1 43E-04	
10b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 16E-02	1 29E-04	
10c	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	ESP	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 04E-02	1 43E-05	
11a	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Cyclone	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 16E-02	1 29E-04	
11b	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	ESP	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 04E-02	1 43E-05	
11c	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber	8 23E-10	4 31E-05	7 96E-10		3 29E-03		2 85E-02	2 90E-03	1 00E-04	
11d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF	8 23E-10	4 31E-05	7 96E-10		3 29E-03		1 14E-02	8 12E-03	1 43E-05	
12a	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 16E-02	1 29E-04	
12b	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone/Venturi/Packed	8 23E-10	4 31E-05	7 96E-10		3 29E-03		1 14E-04	1 16E-04	7 15E-05	
12c	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP	9 14E-10	4 79E-05	8 85E-10		3 65E-03		1 14E-02	1 04E-02	1 43E-05	
12d	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/FSI	9 14E-10	4 79E-05	8 85E-10		3 65E-03		5 71E-03	5 80E-03	1 43E-05	
12e	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/SD	8 23E-10	4 31E-05	7 96E-10		3 29E-03		1 14E-03	1 16E-03	2 86E-06	
12f	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF	8 23E-10	4 31E-05	7 96E-10		3 29E-03		1 14E-02	8 12E-03	1 43E-05	
12g	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/FSI	8 23E-10	4 31E-05	7 96E-10		3 29E-03		5 71E-03	5 80E-03	1 43E-05	
12h	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/Wet Scrubber	8 23E-10	4 31E-05	7 96E-10		3 29E-03		2 85E-03	2 90E-03	1 43E-05	
12i	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Wet Scrubber	8 23E-10	4 31E-05	7 96E-10		3 29E-03		2 85E-03	2 90E-03	1 00E-04	
13a	Gas	Other	0-10	No Control	5 99E-12		6 43E-11	6 86E-07	3 30E-04		1 24E-05		2 43E-06	9 14E-07
13b	Gas	Other	0-10	Cyclone	5 99E-12		6 43E-11	6 86E-07	3 30E-04		1 24E-05		2 18E-06	9 14E-07
13c	Gas	Other	0-10	ESP	5 99E-12		6 43E-11	6 86E-07	3 30E-04		1 24E-05		2 43E-07	9 14E-07
13d	Gas	Other	0-10	FF	5 99E-12		5 79E-11	6 17E-07	2 97E-04		1 24E-05		2 43E-07	8 23E-07
13e	Gas	Other	0-10	FF/DSI	5 39E-12		5 79E-11	6 17E-07	2 97E-04		6 20E-06		2 43E-07	8 23E-07
13f	Gas	Other	0-10	FF/Wet Scrubber	5 39E-12		5 79E-11	6 17E-07	2 97E-04		3 10E-06		2 43E-07	8 23E-07
13g	Gas	Other	0-10	Venturi/Packed	5 39E-12		5 79E-11	6 17E-07	2 97E-04		1 24E-07		1 21E-06	8 23E-07
13h	Gas	Other	0-10	Wet Scrubber	5 39E-12		5 79E-11	6 17E-07	2 97E-04		3 10E-06		1 70E-06	8 23E-07
14a	Gas	Other	10-100	No Control	5 99E-12		6 43E-11	6 86E-07	3 30E-04		1 24E-05		2 43E-06	9 14E-07
14b	Gas	Other	10-100	Cyclone	5 99E-12		6 43E-11	6 86E-07	3 30E-04		1 24E-05		2 18E-06	9 14E-07
14c	Gas	Other	10-100	ESP	5 99E-12		6 43E-11	6 86E-07	3 30E-04		1 24E-05		2 43E-07	9 14E-07
14d	Gas	Other	10-100	FF	5 39E-12		5 79E-11	6 17E-07	2 97E-04		1 24E-05		2 43E-07	8 23E-07
14e	Gas	Other	10-100	FF/Wet Scrubber	5 39E-12		5 79E-11	6 17E-07	2 97E-04		3 10E-06		2 43E-07	8 23E-07
14f	Gas	Other	10-100	Wet Scrubber	5 39E-12		5 79E-11	6 17E-07	2 97E-04		3 10E-06		1 70E-06	8 23E-07

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
15a	Gas	Other	100-250	No Control	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-06	9.14E-07
15b	Gas	Other	100-250	Cyclone	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.18E-06	9.14E-07
15c	Gas	Other	100-250	ESP	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-07	9.14E-07
15d	Gas	Other	100-250	ESP/Wet Scrubber	5.39E-12		5.79E-11	6.17E-07	2.97E-04		3.10E-06		2.43E-07	8.23E-07
15e	Gas	Other	100-250	FF	5.39E-12		5.79E-11	6.17E-07	2.97E-04		1.24E-06		2.43E-07	8.23E-07
15f	Gas	Other	100-250	Wet Scrubber	5.39E-12		5.79E-11	6.17E-07	2.97E-04		3.10E-06		1.70E-06	8.23E-07
16a	Gas	Other	>250	No Control	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-06	9.14E-07
16b	Gas	Other	>250	Cyclone	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.18E-06	9.14E-07
16c	Gas	Other	>250	ESP	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-07	9.14E-07
16d	Gas	Other	>250	Wet Scrubber	5.39E-12		5.79E-11	6.17E-07	2.97E-04		3.10E-06		1.70E-06	8.23E-07
17a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-05	
17b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.53E-05	
17c	Gas/Wood/Other Biomass/Liquid FF	All	0-10	FF		4.10E-05		3.52E-06	4.31E-04		4.38E-03		3.92E-06	
17d	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		2.74E-05	
18a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-05	
18b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.53E-05	
18c	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-06	
18d	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP/Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		3.92E-06	
18e	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF		4.10E-05		3.52E-06	4.31E-04		4.38E-03		3.92E-06	
18f	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF/Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		3.92E-06	
18g	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		2.74E-05	
19b	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.53E-05	
19c	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone/Venturi/Packed		4.10E-05		3.52E-06	4.31E-04		4.38E-03		1.96E-05	
19d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-06	
19e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		3.92E-06	
19f	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		2.74E-05	
20a	Gas/Wood/Other Biomass/Liquid FF	All	>250	Cyclone		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.53E-05	
20b	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-06	
20c	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP/Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		3.92E-06	
20d	Gas/Wood/Other Biomass/Liquid FF	All	>250	FF		4.10E-05		3.52E-06	4.31E-04		4.38E-03		3.92E-06	
20e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		2.74E-05	
21a	Distillate Liquid FF	All	0-10	No Control	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		2.22E-06	
21b	Distillate Liquid FF	All	0-10	Cyclone	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		1.99E-06	
21d	Distillate Liquid FF	All	0-10	FF	5.40E-11		1.95E-10	2.91E-07	1.36E-04		7.10E-05		2.22E-07	
21e	Distillate Liquid FF	All	0-10	Wet Scrubber	5.40E-11		1.95E-10	2.91E-07	1.36E-04		1.78E-05		1.55E-06	
22a	Distillate Liquid FF	All	10-100	No Control	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		2.22E-06	
22b	Distillate Liquid FF	All	10-100	Cyclone	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		1.99E-06	
22c	Distillate Liquid FF	All	10-100	ESP	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		2.22E-07	
22d	Distillate Liquid FF	All	10-100	FF	5.40E-11		1.95E-10	2.91E-07	1.36E-04		7.10E-05		2.22E-07	
22g	Distillate Liquid FF	All	10-100	Wet Scrubber	5.40E-11		1.95E-10	2.91E-07	1.36E-04		1.78E-05		1.55E-06	
23a	Distillate Liquid FF	All	100-250	No Control	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		2.22E-06	
23b	Distillate Liquid FF	All	100-250	Cyclone	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		1.99E-06	
23d	Distillate Liquid FF	All	100-250	FF	5.40E-11		1.95E-10	2.91E-07	1.36E-04		7.10E-05		2.22E-07	
23f	Distillate Liquid FF	All	100-250	Wet Scrubber	5.40E-11		1.95E-10	2.91E-07	1.36E-04		1.78E-05		1.55E-06	
24a	Distillate Liquid FF	All	>250	No Control	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		2.22E-06	
24d	Distillate Liquid FF	All	>250	ESP	6.00E-11		2.17E-10	3.23E-07	1.51E-04		7.10E-05		2.22E-07	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
25a	NFF Liquid/NFF Solid/Gas	All	0-10	No Control	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-04	
25b	NFF Liquid/NFF Solid/Gas	All	0-10	Cyclone	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.27E-04	
26a	NFF Liquid/NFF Solid/Gas	All	10-100	No Control	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-04	
26b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.27E-04	
26c	NFF Liquid/NFF Solid/Gas	All	10-100	ESP	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-05	
26d	NFF Liquid/NFF Solid/Gas	All	10-100	FF	1.29E-12		3.41E-11	7.27E-07			2.95E-02		1.41E-05	
26e	NFF Liquid/NFF Solid/Gas	All	10-100	FF/SD	1.00E-12		2.65E-11	5.65E-07			2.95E-03		1.41E-06	
26f	NFF Liquid/NFF Solid/Gas	All	10-100	Wet Scrubber	1.29E-12		3.41E-11	7.27E-07			7.37E-03		9.87E-05	
27a	NFF Liquid/NFF Solid/Gas	All	100-250	No Control	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-04	
27b	NFF Liquid/NFF Solid/Gas	All	100-250	ESP	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-05	
27c	NFF Liquid/NFF Solid/Gas	All	100-250	ESP/Wet Scrubber	1.29E-12		3.41E-11	7.27E-07			7.37E-03		1.41E-05	
27d	NFF Liquid/NFF Solid/Gas	All	100-250	FF	1.29E-12		3.41E-11	7.27E-07			2.95E-02		1.41E-05	
27e	NFF Liquid/NFF Solid/Gas	All	100-250	Cyclone	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.27E-04	
27f	NFF Liquid/NFF Solid/Gas	All	100-250	Wet Scrubber	1.29E-12		3.41E-11	7.27E-07			7.37E-03		9.87E-05	
28a	NFF Liquid/NFF Solid/Gas	All	>250	No Control	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-04	
28b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-05	
28c	NFF Liquid/NFF Solid/Gas	All	>250	Wet Scrubber	1.29E-12		3.41E-11	7.27E-07			7.37E-03		9.87E-05	
29a	Wood	Other	0-10	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
29b	Wood	Other	0-10	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.79E-04	
29c	Wood	Other	0-10	FF	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.99E-05	
30a	Wood	Other	10-100	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
30b	Wood	Other	10-100	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.79E-04	
30c	Wood	Other	10-100	ESP	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-05	
30d	Wood	Other	10-100	FF	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.99E-05	
30e	Wood	Other	10-100	Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.39E-04	
31a	Wood	Other	100-250	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
31b	Wood	Other	100-250	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.79E-04	
31c	Wood	Other	100-250	Cyclone/Venturi/Packed	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		9.96E-05	
31d	Wood	Other	100-250	ESP	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-05	
31e	Wood	Other	100-250	Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.39E-04	
32a	Wood	Other	>250	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
32b	Wood	Other	>250	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.79E-04	
32c	Wood	Other	>250	ESP	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-05	
32d	Wood	Other	>250	Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.39E-04	
33a	Wood	Wall-fired/PC	0-10	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
33b	Wood	Wall-fired/PC	0-10	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.79E-04	
34a	Wood	Wall-fired/PC	10-100	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
34b	Wood	Wall-fired/PC	10-100	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.79E-04	
34c	Wood	Wall-fired/PC	10-100	FF	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.99E-05	
34d	Wood	Wall-fired/PC	10-100	Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.39E-04	
35a	Wood	Wall-fired/PC	>250	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.68E-02		1.99E-04	
35b	Wood	Wall-fired/PC	>250	ESP/Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	1.66E-02		1.99E-05	
36a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control	1.80E-09		2.65E-09	1.06E-05	3.00E-04		1.47E-02		2.10E-04	
36b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Cyclone	1.80E-09		2.65E-09	1.06E-05	3.00E-04		1.47E-02		1.89E-04	
36c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	ESP	1.80E-09		2.65E-09	1.06E-05	3.00E-04		1.47E-02		2.10E-05	
36e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Wet Scrubber	1.62E-09		2.38E-09	9.52E-06	2.70E-04		3.68E-03		1.47E-04	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
37a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	No Control	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		2 10E-04	
37b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		1 89E-04	
37c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone/Venturi/Packed	1 62E-09		2 38E-09	9 52E-06	2 70E-04		1 47E-04		1 05E-04	
37d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		2 10E-05	
37e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	FF	1 62E-09		2 38E-09	9 52E-06	2 70E-04		1 47E-02		2 10E-05	
37f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Wet Scrubber	1 62E-09		2 38E-09	9 52E-06	2 70E-04		3 68E-03		1 47E-04	
38a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		1 89E-04	
38b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone/Venturi/Packed	1 62E-09		2 38E-09	9 52E-06	2 70E-04		1 47E-04		1 05E-04	
38c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	ESP	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		2 10E-05	
38d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF	1 62E-09		2 38E-09	9 52E-06	2 70E-04		1 47E-02		2 10E-05	
38e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/FSI	1 62E-09		2 38E-09	9 52E-06	2 70E-04		7 37E-03		2 10E-05	
38f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/Wet Scrubber	1 62E-09		2 38E-09	9 52E-06	2 70E-04		3 68E-03		2 10E-05	
38g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber	1 62E-09		2 38E-09	9 52E-06	2 70E-04		3 68E-03		1 47E-04	
39a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	No Control	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		2 10E-04	
39b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Cyclone	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		1 89E-04	
39c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP	1 80E-09		2 65E-09	1 06E-05	3 00E-04		1 47E-02		2 10E-05	
39e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP/Wet Scrubber	1 62E-09		2 38E-09	9 52E-06	2 70E-04		3 68E-03		2 10E-05	
39f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	FF	1 62E-09		2 38E-09	9 52E-06	2 70E-04		1 47E-02		2 10E-05	
39g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Wet Scrubber	1 62E-09		2 38E-09	9 52E-06	2 70E-04		3 68E-03		1 47E-04	
40a	Residual Liquid FF	All	0-10	No Control	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-05	
40b	Residual Liquid FF	All	0-10	Cyclone	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 47E-05	
40d	Residual Liquid FF	All	0-10	FF	5 40E-11		1 95E-10	2 91E-07	7 02E-05		7 10E-05		1 63E-06	
41a	Residual Liquid FF	All	10-100	No Control	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-05	
41b	Residual Liquid FF	All	10-100	Cyclone	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 47E-05	
41c	Residual Liquid FF	All	10-100	ESP	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-06	
41d	Residual Liquid FF	All	10-100	FF	5 40E-11		1 95E-10	2 91E-07	7 02E-05		7 10E-05		1 63E-06	
41g	Residual Liquid FF	All	10-100	Wet Scrubber	5 40E-11		1 95E-10	2 91E-07	7 02E-05		1 78E-05		1 14E-05	
42a	Residual Liquid FF	All	100-250	No Control	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-05	
42b	Residual Liquid FF	All	100-250	Cyclone	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 47E-05	
42c	Residual Liquid FF	All	100-250	ESP	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-06	
42d	Residual Liquid FF	All	100-250	FF	5 40E-11		1 95E-10	2 91E-07	7 02E-05		7 10E-05		1 63E-06	
42e	Residual Liquid FF	All	100-250	Venturi/Packed	5 40E-11		1 95E-10	2 91E-07	7 02E-05		7 10E-07		8 16E-06	
42f	Residual Liquid FF	All	100-250	Wet Scrubber	5 40E-11		1 95E-10	2 91E-07	7 02E-05		1 78E-05		1 14E-05	
43a	Residual Liquid FF	All	>250	No Control	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-05	
43b	Residual Liquid FF	All	>250	Cyclone	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 47E-05	
43d	Residual Liquid FF	All	>250	ESP	6 00E-11		2 17E-10	3 23E-07	7 80E-05		7 10E-05		1 63E-06	
44a	Bagasse/Other	All	10-100	Cyclone	1 80E-09	4 55E-05	2 65E-09	1 06E-05	4 79E-04		1 47E-02		1 89E-04	
44b	Bagasse/Other	All	10-100	Wet Scrubber	1 62E-09	4 31E-04	2 38E-09	9 52E-06	4 31E-04		3 68E-03		1 47E-04	
45a	Bagasse/Other	All	100-250	No Control	1 80E-09	4 55E-05	2 65E-09	1 06E-05	4 79E-04		1 47E-02		2 10E-04	
45b	Bagasse/Other	All	100-250	Cyclone	1 80E-09	4 55E-05	2 65E-09	1 06E-05	4 79E-04		1 47E-02		1 89E-04	
45c	Bagasse/Other	All	100-250	Wet Scrubber	1 62E-09	4 10E-05	2 38E-09	9 52E-06	4 31E-04		3 68E-03		1 47E-04	
46a	Bagasse/Other	All	>250	ESP	1 80E-09	4 55E-05	2 65E-09	1 06E-05	4 79E-04		1 47E-02		2 10E-05	
46b	Bagasse/Other	All	>250	ESP/Activated Carbon Adsorption	1 62E-09	4 10E-05	2 38E-09	9 52E-06	4 31E-04		1 33E-02		2 10E-05	
46c	Bagasse/Other	All	>250	Wet Scrubber	1 62E-09	4 10E-05	2 38E-09	9 52E-06	4 31E-04		3 68E-03		1 47E-04	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
47a	Coal	Other	0-10	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
48a	Coal	Other	10-100	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
48b	Coal	Other	10-100	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.65E-04	
48c	Coal	Other	10-100	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
48d	Coal	Other	10-100	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
49b	Coal	Other	100-250	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.65E-04	
49c	Coal	Other	100-250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
50c	Coal	Other	>250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
50f	Coal	Other	>250	FF	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		5.35E-02	2.73E-03	2.94E-05	
52a	Coal	Wall-fired/PC	10-100	No Control	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.94E-04	
52b	Coal	Wall-fired/PC	10-100	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.65E-04	
52f	Coal	Wall-fired/PC	10-100	Wet Scrubber	3.23E-09	3.23E-06	2.02E-09	1.44E-06	1.66E-05		1.34E-02	9.74E-04	2.06E-04	
53b	Coal	Wall-fired/PC	100-250	Cyclone	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.89E-03	2.65E-04	
53d	Coal	Wall-fired/PC	100-250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
54c	Coal	Wall-fired/PC	>250	ESP	3.59E-09	3.59E-06	2.25E-09	1.60E-06	1.85E-05		5.35E-02	3.50E-03	2.94E-05	
55b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone	9.14E-10	4.79E-05	8.85E-10		3.65E-03		1.14E-02	1.16E-02	1.29E-04	
56b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone	9.14E-10	4.79E-05	8.85E-10		3.65E-03		1.14E-02	1.16E-02	1.29E-04	
57d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF	8.23E-10	4.31E-05	7.96E-10		3.29E-03		1.14E-02	8.12E-03	1.43E-05	
58a	Gas	Other	0-10	No Control	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-06	9.14E-07
58d	Gas	Other	0-10	FF	5.39E-12		5.79E-11	6.17E-07	2.97E-04		1.24E-05		2.43E-07	8.23E-07
58h	Gas	Other	0-10	Wet Scrubber	5.39E-12		5.79E-11	6.17E-07	2.97E-04		3.10E-06		1.70E-06	8.23E-07
59a	Gas	Other	10-100	No Control	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-06	9.14E-07
59b	Gas	Other	10-100	Cyclone	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.18E-06	9.14E-07
59d	Gas	Other	10-100	FF	5.39E-12		5.79E-11	6.17E-07	2.97E-04		1.24E-05		2.43E-07	8.23E-07
59e	Gas	Other	10-100	FF/Wet Scrubber	5.39E-12		5.79E-11	6.17E-07	2.97E-04		3.10E-06		2.43E-07	8.23E-07
59f	Gas	Other	10-100	Wet Scrubber	5.39E-12		5.79E-11	6.17E-07	2.97E-04		3.10E-06		1.70E-06	8.23E-07
60a	Gas	Other	100-250	No Control	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-06	9.14E-07
60b	Gas	Other	100-250	Cyclone	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.18E-06	9.14E-07
60e	Gas	Other	100-250	FF	5.39E-12		5.79E-11	6.17E-07	2.97E-04		1.24E-05		2.43E-07	8.23E-07
61a	Gas	Other	>250	No Control	5.99E-12		6.43E-11	6.86E-07	3.30E-04		1.24E-05		2.43E-06	9.14E-07
62a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-05	
62b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.53E-05	
63a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-05	
63b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.53E-05	
64d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP		4.55E-05		3.91E-06	4.79E-04		4.38E-03		3.92E-06	
64e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		3.92E-06	
65e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber		4.10E-05		3.52E-06	4.31E-04		1.10E-03		2.74E-05	
66a	Distillate Liquid FF	All	0-10	No Control	6.00E-11		2.17E-10	2.33E-07	1.51E-04		7.10E-05		2.22E-06	
67a	Distillate Liquid FF	All	10-100	No Control	6.00E-11		2.17E-10	2.33E-07	1.51E-04		7.10E-05		2.22E-06	
67d	Distillate Liquid FF	All	10-100	FF	5.40E-11		1.95E-10	2.91E-07	1.36E-04		7.10E-05		2.22E-07	
68a	Distillate Liquid FF	All	100-250	No Control	6.00E-11		2.17E-10	2.33E-07	1.51E-04		7.10E-05		2.22E-06	
68a	Distillate Liquid FF	All	>250	No Control	6.00E-11		2.17E-10	2.33E-07	1.51E-04		7.10E-05		2.22E-06	
69d	Distillate Liquid FF	All	>250	ESP	6.00E-11		2.17E-10	2.33E-07	1.51E-04		7.10E-05		2.22E-07	
70b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.27E-04	
72b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	1.43E-12		3.79E-11	8.08E-07			2.95E-02		1.41E-05	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene
73a	Wood	Other	0-10	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.66E-02		1.99E-04	
73b	Wood	Other	0-10	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.66E-02		1.79E-04	
74a	Wood	Other	10-100	No Control	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.66E-02		1.99E-04	
74b	Wood	Other	10-100	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.66E-02		1.79E-04	
74e	Wood	Other	10-100	Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	4.14E-03		1.39E-04	
75e	Wood	Other	100-250	Wet Scrubber	8.34E-09	4.69E-06	1.18E-08	1.43E-05	1.35E-02	3.18E-07	4.14E-03		1.39E-04	
76b	Wood	Wall-fired/PC	0-10	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.66E-02		1.79E-04	
77b	Wood	Wall-fired/PC	10-100	Cyclone	9.26E-09	5.21E-06	1.31E-08	1.59E-05	1.50E-02	3.54E-07	1.66E-02		1.79E-04	
78a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control	1.80E-09		2.65E-09	1.06E-05	3.00E-04		1.47E-02		2.10E-04	
79b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone	1.80E-09		2.65E-09	1.06E-05	3.00E-04		1.47E-02		1.89E-04	
79d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP	1.80E-09		2.65E-09	1.06E-05	3.00E-04		1.47E-02		2.10E-05	
80a	Residual Liquid FF	All	0-10	No Control	6.00E-11		2.17E-10	3.23E-07	7.80E-05		7.10E-05		1.63E-05	
81a	Residual Liquid FF	All	10-100	No Control	6.00E-11		2.17E-10	3.23E-07	7.80E-05		7.10E-05		1.63E-05	
81g	Residual Liquid FF	All	10-100	Wet Scrubber	5.40E-11		1.95E-10	2.91E-07	7.02E-05		1.78E-05		1.14E-05	
82a	Residual Liquid FF	All	100-250	No Control	6.00E-11		2.17E-10	3.23E-07	7.80E-05		7.10E-05		1.63E-05	
83a	Residual Liquid FF	All	>250	No Control	6.00E-11		2.17E-10	3.23E-07	7.80E-05		7.10E-05		1.63E-05	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes
1a	Coal	Other	0-10	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
1b	Coal	Other	0-10	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
1c	Coal	Other	0-10	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
2a	Coal	Other	10-100	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
2b	Coal	Other	10-100	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
2c	Coal	Other	10-100	ESP	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
2d	Coal	Other	10-100	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
2e	Coal	Other	10-100	FF/DSI	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
2f	Coal	Other	10-100	FF/SD	1.25E-05	5.43E-06	3.95E-07	1.04E-04	2.87E-05	2.53E-06	3.22E-07	2.48E-04	1.31E-05	1.17E-05
2g	Coal	Other	10-100	Wet Scrubber	8.72E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.77E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05
3a	Coal	Other	100-250	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
3b	Coal	Other	100-250	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
3c	Coal	Other	100-250	ESP	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
3d	Coal	Other	100-250	ESP/Wet Scrubber	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	6.21E-04	1.69E-05	1.51E-05
3e	Coal	Other	100-250	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
3f	Coal	Other	100-250	FF/DSI	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
3g	Coal	Other	100-250	FF/Wet Scrubber	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
3h	Coal	Other	100-250	Wet Scrubber	8.72E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.77E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05
4a	Coal	Other	>250	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
4b	Coal	Other	>250	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
4c	Coal	Other	>250	ESP	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
4d	Coal	Other	>250	ESP/DSI	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
4e	Coal	Other	>250	ESP/Wet Scrubber	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	6.21E-04	1.69E-05	1.51E-05
4f	Coal	Other	>250	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
4g	Coal	Other	>250	FF/DSI	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
4h	Coal	Other	>250	FF/FSI	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
4i	Coal	Other	>250	FF/SD	1.25E-05	5.43E-06	3.95E-07	1.04E-04	2.87E-05	2.53E-06	3.22E-07	2.48E-04	1.31E-05	1.17E-05
4j	Coal	Other	>250	Wet Scrubber	8.72E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.77E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05
5a	Coal	Wall-fired/PC	0-10	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
5b	Coal	Wall-fired/PC	0-10	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
6a	Coal	Wall-fired/PC	10-100	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
6b	Coal	Wall-fired/PC	10-100	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
6c	Coal	Wall-fired/PC	10-100	ESP	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
6d	Coal	Wall-fired/PC	10-100	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
6e	Coal	Wall-fired/PC	10-100	FF/DSI	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
6f	Coal	Wall-fired/PC	10-100	Wet Scrubber	8.72E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.77E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05
7a	Coal	Wall-fired/PC	100-250	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
7b	Coal	Wall-fired/PC	100-250	Cyclone	1.12E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.27E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
7c	Coal	Wall-fired/PC	100-250	Cyclone/Venturi/Packed	6.23E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.26E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05
7d	Coal	Wall-fired/PC	100-250	ESP	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
7e	Coal	Wall-fired/PC	100-250	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
7f	Coal	Wall-fired/PC	100-250	FF/SD	1.25E-05	5.43E-06	3.95E-07	1.04E-04	2.87E-05	2.53E-06	3.22E-07	2.48E-04	1.31E-05	1.17E-05
7g	Coal	Wall-fired/PC	100-250	FF/Wet Scrubber	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
7h	Coal	Wall-fired/PC	100-250	Wet Scrubber	8.72E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.77E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	O-Xylene	Phosphorus	Toluene	Xylenes
8a	Coal	Wall-fired/PC	>250	No Control	1.25E-03	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-04	4.60E-07	2.48E-03	1.87E-05	1.67E-05
8c	Coal	Wall-fired/PC	>250	ESP	1.25E-04	5.43E-06	5.64E-07	1.48E-04	4.09E-05	2.53E-05	4.60E-07	2.48E-03	1.87E-05	1.67E-05
8d	Coal	Wall-fired/PC	>250	ESP/SD	2.49E-05	5.43E-06	5.08E-07	1.33E-04	3.69E-05	5.05E-06	4.14E-07	2.48E-04	1.69E-05	1.51E-05
8e	Coal	Wall-fired/PC	>250	ESP/Venturi/Packed	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	6.21E-04	1.69E-05	1.51E-05
8f	Coal	Wall-fired/PC	>250	ESP/Wet Scrubber	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	6.21E-04	1.69E-05	1.51E-05
8g	Coal	Wall-fired/PC	>250	FF	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
8h	Coal	Wall-fired/PC	>250	FF/DSI	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	1.74E-03	1.69E-05	1.51E-05
8i	Coal	Wall-fired/PC	>250	FF/SD	1.25E-05	5.43E-06	3.95E-07	1.04E-04	2.87E-05	2.53E-06	3.22E-07	2.48E-04	1.31E-05	1.17E-05
8j	Coal	Wall-fired/PC	>250	FF/Wet Scrubber	1.25E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	2.53E-05	4.14E-07	6.21E-04	1.69E-05	1.51E-05
8k	Coal	Wall-fired/PC	>250	Wet Scrubber	8.72E-04	5.43E-06	5.08E-07	1.33E-04	3.69E-05	1.77E-04	4.14E-07	6.21E-04	1.69E-05	1.51E-05
9a	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	No Control	8.50E-04	1.36E-06		1.52E-03		1.90E-04	3.70E-05	4.58E-03		
9b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone	7.65E-04	1.36E-06		1.52E-03		1.71E-04	3.70E-05	4.58E-03		
10a	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	No Control	8.50E-04	1.36E-06		1.52E-03		1.90E-04	3.70E-05	4.58E-03		
10b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone	7.65E-04	1.36E-06		1.52E-03		1.71E-04	3.70E-05	4.58E-03		
10c	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	ESP	8.50E-05	1.36E-06		1.52E-03		1.90E-05	3.70E-05	4.12E-03		
11a	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Cyclone	7.65E-04	1.36E-06		1.52E-03		1.71E-04	3.70E-05	4.58E-03		
11b	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	ESP	8.50E-05	1.36E-06		1.52E-03		1.90E-05	3.70E-05	4.12E-03		
11c	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber	5.95E-04	1.36E-06		1.37E-03		1.33E-04	3.33E-05	1.14E-03		
11d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF	8.50E-05	1.36E-06		1.37E-03		1.90E-05	3.33E-05	3.21E-03		
12a	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone	7.65E-04	1.36E-06		1.52E-03		1.71E-04	3.70E-05	4.58E-03		
12b	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone/Venturi/Packed	4.25E-04	1.36E-06		1.37E-03		9.52E-05	3.33E-05	1.14E-03		
12c	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP	8.50E-05	1.36E-06		1.52E-03		1.90E-05	3.70E-05	4.12E-03		
12d	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/FSI	8.50E-05	1.36E-06		1.52E-03		1.90E-05	3.70E-05	2.29E-03		
12e	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/SD	1.70E-05	1.36E-06		1.52E-03		3.81E-06	3.33E-05	4.58E-04		
12f	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF	8.50E-05	1.36E-06		1.37E-03		1.90E-05	3.33E-05	3.21E-03		
12g	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/FSI	8.50E-05	1.36E-06		1.37E-03		1.90E-05	3.33E-05	2.29E-03		
12h	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/Wet Scrubber	8.50E-05	1.36E-06		1.37E-03		1.90E-05	3.33E-05	1.14E-03		
12i	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Wet Scrubber	5.95E-04	1.36E-06		1.37E-03		1.33E-04	3.33E-05	1.14E-03		
13a	Gas	Other	0-10	No Control	1.78E-05		2.46E-06		2.01E-05	1.46E-05	1.21E-06	2.07E-06	2.44E-05	
13b	Gas	Other	0-10	Cyclone	1.60E-05		2.46E-06		2.01E-05	1.31E-05	1.21E-06	2.07E-06	2.44E-05	
13c	Gas	Other	0-10	ESP	1.78E-06		2.46E-06		2.01E-05	1.46E-06	1.21E-06	1.86E-06	2.44E-05	
13d	Gas	Other	0-10	FF	1.78E-06		2.21E-06		1.80E-05	1.46E-06	1.09E-06	1.45E-06	2.20E-05	
13e	Gas	Other	0-10	FF/DSI	1.78E-06		2.21E-06		1.80E-05	1.46E-06	1.09E-06	1.03E-06	2.20E-05	
13f	Gas	Other	0-10	FF/Wet Scrubber	1.78E-06		2.21E-06		1.80E-05	1.46E-06	1.09E-06	5.16E-07	2.20E-05	
13g	Gas	Other	0-10	Venturi/Packed	8.89E-06		2.21E-06		1.80E-05	7.29E-06	1.09E-06	5.16E-07	2.20E-05	
13h	Gas	Other	0-10	Wet Scrubber	1.24E-05		2.21E-06		1.80E-05	1.02E-05	1.09E-06	5.16E-07	2.20E-05	
14a	Gas	Other	10-100	No Control	1.78E-05		2.46E-06		2.01E-05	1.46E-05	1.21E-06	2.07E-06	2.44E-05	
14b	Gas	Other	10-100	Cyclone	1.60E-05		2.46E-06		2.01E-05	1.31E-05	1.21E-06	2.07E-06	2.44E-05	
14c	Gas	Other	10-100	ESP	1.78E-06		2.46E-06		2.01E-05	1.46E-06	1.21E-06	1.86E-06	2.44E-05	
14d	Gas	Other	10-100	FF	1.78E-06		2.21E-06		1.80E-05	1.46E-06	1.09E-06	1.45E-06	2.20E-05	
14e	Gas	Other	10-100	FF/Wet Scrubber	1.78E-06		2.21E-06		1.80E-05	1.46E-06	1.09E-06	5.16E-07	2.20E-05	
14f	Gas	Other	10-100	Wet Scrubber	1.24E-05		2.21E-06		1.80E-05	1.02E-05	1.09E-06	5.16E-07	2.20E-05	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	p-Xylene	Phosphorus	Toluene	Xylenes
15a	Gas	Other	100-250	No Control	1 78E-05		2 46E-06		2 01E-05	1 46E-05	1 21E-06	2 07E-06	2 44E-05	
15b	Gas	Other	100-250	Cyclone	1 60E-05		2 46E-06		2 01E-05	1 31E-05	1 21E-06	2 07E-06	2 44E-05	
15c	Gas	Other	100-250	ESP	1 78E-06		2 46E-06		2 01E-05	1 46E-06	1 21E-06	1 86E-06	2 44E-05	
15d	Gas	Other	100-250	ESP/Wet Scrubber	1 78E-06		2 21E-06		1 80E-05	1 46E-06	1 09E-06	5 16E-07	2 20E-05	
15e	Gas	Other	100-250	FF	1 78E-06		2 21E-06		1 80E-05	1 46E-06	1 09E-06	1 45E-06	2 20E-05	
15f	Gas	Other	100-250	Wet Scrubber	1 24E-05		2 21E-06		1 80E-05	1 02E-05	1 09E-06	5 16E-07	2 20E-05	
16a	Gas	Other	>250	No Control	1 78E-05		2 46E-06		2 01E-05	1 46E-05	1 21E-06	2 07E-06	2 44E-05	
16b	Gas	Other	>250	Cyclone	1 60E-05		2 46E-06		2 01E-05	1 31E-05	1 21E-06	2 07E-06	2 44E-05	
16c	Gas	Other	>250	ESP	1 78E-06		2 46E-06		2 01E-05	1 46E-06	1 21E-06	1 86E-06	2 44E-05	
16d	Gas	Other	>250	Wet Scrubber	1 24E-05		2 21E-06		1 80E-05	1 02E-05	1 09E-06	5 16E-07	2 20E-05	
17a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control	1 76E-03	7 17E-07		1 49E-04	2 17E-04	1 39E-05	1 13E-04	5 30E-04	5 26E-04	
17b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone	1 59E-03	7 17E-07		1 49E-04	2 17E-04	1 25E-05	1 13E-04	5 30E-04	5 26E-04	
17c	Gas/Wood/Other Biomass/Liquid FF	All	0-10	FF	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	3 71E-04	4 74E-04	
17d	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Wet Scrubber	1 24E-03	7 17E-07		1 34E-04	1 95E-04	9 71E-06	1 02E-04	1 32E-04	4 74E-04	
18a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control	1 76E-03	7 17E-07		1 49E-04	2 17E-04	1 39E-05	1 13E-04	5 30E-04	5 26E-04	
18b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone	1 59E-03	7 17E-07		1 49E-04	2 17E-04	1 25E-05	1 13E-04	5 30E-04	5 26E-04	
18c	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP	1 76E-04	7 17E-07		1 49E-04	2 17E-04	1 39E-06	1 13E-04	4 77E-04	5 26E-04	
18d	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP/Wet Scrubber	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	1 32E-04	4 74E-04	
18e	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	3 71E-04	4 74E-04	
18f	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF/Wet Scrubber	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	1 32E-04	4 74E-04	
18g	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Wet Scrubber	1 24E-03	7 17E-07		1 34E-04	1 95E-04	9 71E-06	1 02E-04	1 32E-04	4 74E-04	
19b	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone	1 59E-03	7 17E-07		1 49E-04	2 17E-04	1 25E-05	1 13E-04	5 30E-04	5 26E-04	
19c	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone/Venturi/Packed	8 82E-04	7 17E-07		1 34E-04	1 95E-04	6 94E-06	1 02E-04	1 32E-04	4 74E-04	
19d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP	1 76E-04	7 17E-07		1 49E-04	2 17E-04	1 39E-06	1 13E-04	4 77E-04	5 26E-04	
19e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	1 32E-04	4 74E-04	
19f	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Wet Scrubber	1 24E-03	7 17E-07		1 34E-04	1 95E-04	9 71E-06	1 02E-04	1 32E-04	4 74E-04	
20a	Gas/Wood/Other Biomass/Liquid FF	All	>250	Cyclone	1 59E-03	7 17E-07		1 49E-04	2 17E-04	1 25E-05	1 13E-04	5 30E-04	5 26E-04	
20b	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP	1 76E-04	7 17E-07		1 49E-04	2 17E-04	1 39E-06	1 13E-04	4 77E-04	5 26E-04	
20c	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP/Wet Scrubber	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	1 32E-04	4 74E-04	
20d	Gas/Wood/Other Biomass/Liquid FF	All	>250	FF	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	3 71E-04	4 74E-04	
20e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber	1 24E-03	7 17E-07		1 34E-04	1 95E-04	9 71E-06	1 02E-04	1 32E-04	4 74E-04	
21a	Distillate Liquid FF	All	0-10	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
21b	Distillate Liquid FF	All	0-10	Cyclone	3 78E-06	8 87E-09	1 07E-06		3 01E-05	9 35E-07	5 00E-07	1 82E-04	6 25E-06	4 53E-06
21d	Distillate Liquid FF	All	0-10	FF	4 20E-07	8 87E-09	9 62E-07		2 71E-05	1 04E-07	4 50E-07	1 27E-04	5 63E-06	4 08E-06
21e	Distillate Liquid FF	All	0-10	Wet Scrubber	2 94E-06	8 87E-09	9 62E-07		2 71E-05	7 27E-07	4 50E-07	4 55E-05	5 63E-06	4 08E-06
22a	Distillate Liquid FF	All	10-100	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
22b	Distillate Liquid FF	All	10-100	Cyclone	3 78E-06	8 87E-09	1 07E-06		3 01E-05	9 35E-07	5 00E-07	1 82E-04	6 25E-06	4 53E-06
22c	Distillate Liquid FF	All	10-100	ESP	4 20E-07	8 87E-09	1 07E-06		3 01E-05	1 04E-07	5 00E-07	1 64E-04	6 25E-06	4 53E-06
22d	Distillate Liquid FF	All	10-100	FF	4 20E-07	8 87E-09	9 62E-07		2 71E-05	1 04E-07	4 50E-07	1 27E-04	5 63E-06	4 08E-06
22g	Distillate Liquid FF	All	10-100	Wet Scrubber	2 94E-06	8 87E-09	9 62E-07		2 71E-05	7 27E-07	4 50E-07	4 55E-05	5 63E-06	4 08E-06
23a	Distillate Liquid FF	All	100-250	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
23b	Distillate Liquid FF	All	100-250	Cyclone	3 78E-06	8 87E-09	1 07E-06		3 01E-05	9 35E-07	5 00E-07	1 82E-04	6 25E-06	4 53E-06
23d	Distillate Liquid FF	All	100-250	FF	4 20E-07	8 87E-09	9 62E-07		2 71E-05	1 04E-07	4 50E-07	1 27E-04	5 63E-06	4 08E-06
23f	Distillate Liquid FF	All	100-250	Wet Scrubber	2 94E-06	8 87E-09	9 62E-07		2 71E-05	7 27E-07	4 50E-07	4 55E-05	5 63E-06	4 08E-06
24a	Distillate Liquid FF	All	>250	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
24d	Distillate Liquid FF	All	>250	ESP	4 20E-07	8 87E-09	1 07E-06		3 01E-05	1 04E-07	5 00E-07	1 64E-04	6 25E-06	4 53E-06

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes
25a	NFF Liquid/NFF Solid/Gas	All	0-10	No Control	1.05E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-04	1.73E-05		2.70E-05	2.31E-06
25b	NFF Liquid/NFF Solid/Gas	All	0-10	Cyclone	1.05E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	1.95E-04	1.73E-05		2.70E-05	2.31E-06
26a	NFF Liquid/NFF Solid/Gas	All	10-100	No Control	1.16E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-04	1.73E-05		2.70E-05	2.31E-06
26b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	1.05E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	1.95E-04	1.73E-05		2.70E-05	2.31E-06
26c	NFF Liquid/NFF Solid/Gas	All	10-100	ESP	1.16E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-05	1.73E-05		2.70E-05	2.31E-06
26d	NFF Liquid/NFF Solid/Gas	All	10-100	FF	1.16E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-05	1.73E-05		2.70E-05	2.31E-06
26e	NFF Liquid/NFF Solid/Gas	All	10-100	FF/SD	1.16E-06	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-06	1.21E-05		1.89E-05	1.62E-06
26f	NFF Liquid/NFF Solid/Gas	All	10-100	Wet Scrubber	8.15E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	1.51E-04	1.56E-05		2.43E-05	2.08E-06
27a	NFF Liquid/NFF Solid/Gas	All	100-250	No Control	1.16E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-04	1.73E-05		2.70E-05	2.31E-06
27b	NFF Liquid/NFF Solid/Gas	All	100-250	ESP	1.16E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-05	1.73E-05		2.70E-05	2.31E-06
27c	NFF Liquid/NFF Solid/Gas	All	100-250	ESP/Wet Scrubber	1.16E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-05	1.56E-05		2.43E-05	2.08E-06
27d	NFF Liquid/NFF Solid/Gas	All	100-250	FF	1.16E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-05	1.56E-05		2.43E-05	2.08E-06
27e	NFF Liquid/NFF Solid/Gas	All	100-250	Cyclone	1.05E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	1.95E-04	1.73E-05		2.70E-05	2.31E-06
27f	NFF Liquid/NFF Solid/Gas	All	100-250	Wet Scrubber	8.15E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	1.51E-04	1.56E-05		2.43E-05	2.08E-06
28a	NFF Liquid/NFF Solid/Gas	All	>250	No Control	1.16E-04	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-04	1.73E-05		2.70E-05	2.31E-06
28b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	1.16E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	2.16E-05	1.73E-05		2.70E-05	2.31E-06
28c	NFF Liquid/NFF Solid/Gas	All	>250	Wet Scrubber	8.15E-05	4.94E-06	8.68E-07	5.20E-05	5.46E-05	1.51E-04	1.56E-05		2.43E-05	2.08E-06
29a	Wood	Other	0-10	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
29b	Wood	Other	0-10	Cyclone	5.08E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
29c	Wood	Other	0-10	ESP	5.63E-04	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-06	5.22E-06	1.53E-04	3.90E-04	1.51E-06
30a	Wood	Other	10-100	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
30b	Wood	Other	10-100	Cyclone	5.08E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
30c	Wood	Other	10-100	ESP	5.63E-04	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-06	5.22E-06	1.53E-04	3.90E-04	1.51E-06
30d	Wood	Other	10-100	FF	5.63E-04	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-06	5.22E-06	1.53E-04	3.90E-04	1.51E-06
30e	Wood	Other	10-100	Wet Scrubber	3.94E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	2.28E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
31a	Wood	Other	100-250	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
31b	Wood	Other	100-250	Cyclone	5.08E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
31c	Wood	Other	100-250	Cyclone/Venturi/Packed	2.81E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	1.63E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
31d	Wood	Other	100-250	ESP	5.63E-04	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-06	5.22E-06	1.97E-04	4.33E-04	1.68E-06
31e	Wood	Other	100-250	Wet Scrubber	3.94E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	2.28E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
32a	Wood	Other	>250	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
32b	Wood	Other	>250	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
32c	Wood	Other	>250	ESP	5.63E-04	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-06	5.80E-06	1.97E-04	4.33E-04	1.68E-06
32d	Wood	Other	>250	Wet Scrubber	3.94E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	2.28E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
33a	Wood	Wall-fired/PC	0-10	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
33b	Wood	Wall-fired/PC	0-10	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
34a	Wood	Wall-fired/PC	10-100	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
34b	Wood	Wall-fired/PC	10-100	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
34c	Wood	Wall-fired/PC	10-100	FF	5.63E-04	1.97E-06	1.22E-05	1.08E-05	1.72E-04	3.26E-06	5.22E-06	1.53E-04	3.90E-04	1.51E-06
34d	Wood	Wall-fired/PC	10-100	Wet Scrubber	3.94E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	2.28E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
35a	Wood	Wall-fired/PC	>250	ESP	5.63E-04	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-06	5.80E-06	1.97E-04	4.33E-04	1.68E-06
35b	Wood	Wall-fired/PC	>250	ESP/Wet Scrubber	5.63E-04	1.97E-06	1.22E-05	1.08E-05	1.72E-04	3.26E-06	5.22E-06	5.47E-05	3.90E-04	1.51E-06
36a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control	5.89E-04	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
36b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Cyclone	5.30E-04	4.36E-06	1.44E-05		5.44E-05	1.38E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
36c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	ESP	5.89E-05	4.36E-06	1.44E-05		5.44E-05	1.53E-05	1.75E-05	4.75E-04	2.34E-05	6.21E-06
36e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Wet Scrubber	4.12E-04	4.36E-06	1.30E-05		4.90E-05	1.07E-04	1.57E-05	1.31E-04	2.10E-05	5.59E-06

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No.	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	p-Xylene	Phosphorus	Toluene	Xylenes
37a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	No Control	5.89E-04	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
37b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone	5.30E-04	4.36E-06	1.44E-05		5.44E-05	1.38E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
37c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone/Venturi/Packed	2.94E-04	4.36E-06	1.30E-05		4.90E-05	7.64E-05	1.57E-05	1.31E-04	2.10E-05	5.59E-06
37d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP	5.89E-05	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
37e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	FF	5.89E-05	4.36E-06	1.30E-05		4.90E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
37f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Wet Scrubber	4.12E-04	4.36E-06	1.30E-05		4.90E-05	1.07E-04	1.57E-05	1.31E-04	2.10E-05	5.59E-06
38a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone	5.30E-04	4.36E-06	1.44E-05		5.44E-05	1.38E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
38b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone/Venturi/Packed	2.94E-04	4.36E-06	1.30E-05		4.90E-05	7.64E-05	1.57E-05	1.31E-04	2.10E-05	5.59E-06
38c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	ESP	5.89E-05	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
38d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF	5.89E-05	4.36E-06	1.30E-05		4.90E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
38e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/FSI	5.89E-05	4.36E-06	1.30E-05		4.90E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
38f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/Wet Scrubber	5.89E-05	4.36E-06	1.30E-05		4.90E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
38g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber	4.12E-04	4.36E-06	1.30E-05		4.90E-05	1.07E-04	1.57E-05	1.31E-04	2.10E-05	5.59E-06
39a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	No Control	5.89E-04	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
39b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Cyclone	5.30E-04	4.36E-06	1.44E-05		5.44E-05	1.38E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
39c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP	5.89E-05	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
39e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP/Wet Scrubber	5.89E-05	4.36E-06	1.30E-05		4.90E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
39f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	FF	5.89E-05	4.36E-06	1.30E-05		4.90E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
39g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Wet Scrubber	4.12E-04	4.36E-06	1.30E-05		4.90E-05	1.07E-04	1.57E-05	1.31E-04	2.10E-05	5.59E-06
40a	Residual Liquid FF	All	0-10	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
40b	Residual Liquid FF	All	0-10	Cyclone	1.25E-03	8.80E-06	1.07E-06		3.01E-05	1.85E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
40d	Residual Liquid FF	All	0-10	FF	1.39E-04	8.80E-06	9.62E-07		2.71E-05	2.06E-04	4.50E-07	1.27E-04	3.56E-05	1.01E-03
41a	Residual Liquid FF	All	10-100	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
41b	Residual Liquid FF	All	10-100	Cyclone	1.25E-03	8.80E-06	1.07E-06		3.01E-05	1.85E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
41c	Residual Liquid FF	All	10-100	ESP	1.39E-04	8.80E-06	1.07E-06		3.01E-05	2.06E-04	4.50E-07	1.27E-04	3.56E-05	1.01E-03
41d	Residual Liquid FF	All	10-100	FF	1.39E-04	8.80E-06	9.62E-07		2.71E-05	2.06E-04	4.50E-07	1.27E-04	3.56E-05	1.01E-03
41g	Residual Liquid FF	All	10-100	Wet Scrubber	9.73E-04	8.80E-06	9.62E-07		2.71E-05	1.44E-03	4.50E-07	4.55E-05	3.56E-05	1.01E-03
42a	Residual Liquid FF	All	100-250	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
42b	Residual Liquid FF	All	100-250	Cyclone	1.25E-03	8.80E-06	1.07E-06		3.01E-05	1.85E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
42c	Residual Liquid FF	All	100-250	ESP	1.39E-04	8.80E-06	1.07E-06		3.01E-05	2.06E-04	4.50E-07	1.27E-04	3.56E-05	1.01E-03
42d	Residual Liquid FF	All	100-250	FF	1.39E-04	8.80E-06	9.62E-07		2.71E-05	2.06E-04	4.50E-07	1.27E-04	3.56E-05	1.01E-03
42e	Residual Liquid FF	All	100-250	Venturi/Packed	6.95E-04	8.80E-06	9.62E-07		2.71E-05	1.03E-03	4.50E-07	4.55E-05	3.56E-05	1.01E-03
42f	Residual Liquid FF	All	100-250	Wet Scrubber	9.73E-04	8.80E-06	9.62E-07		2.71E-05	1.44E-03	4.50E-07	4.55E-05	3.56E-05	1.01E-03
43a	Residual Liquid FF	All	>250	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
43b	Residual Liquid FF	All	>250	Cyclone	1.25E-03	8.80E-06	1.07E-06		3.01E-05	1.85E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
43d	Residual Liquid FF	All	>250	ESP	1.39E-04	8.80E-06	1.07E-06		3.01E-05	2.06E-04	4.50E-07	1.27E-04	3.56E-05	1.01E-03
44a	Bagasse/Other	All	10-100	Cyclone	1.59E-03	4.36E-06	1.44E-05	1.49E-04	2.17E-04	1.38E-04	1.13E-04	5.30E-04	5.26E-04	6.21E-06
44b	Bagasse/Other	All	10-100	Wet Scrubber	1.24E-03	4.36E-06	1.30E-05	1.34E-04	1.95E-04	1.07E-04	1.02E-04	1.32E-04	4.74E-04	5.59E-06
45a	Bagasse/Other	All	100-250	No Control	1.76E-03	4.36E-06	1.44E-05	1.49E-04	2.17E-04	1.53E-04	1.13E-04	5.30E-04	5.26E-04	6.21E-06
45b	Bagasse/Other	All	100-250	Cyclone	1.59E-03	4.36E-06	1.44E-05	1.49E-04	2.17E-04	1.38E-04	1.13E-04	5.30E-04	5.26E-04	6.21E-06
45c	Bagasse/Other	All	100-250	Wet Scrubber	1.24E-03	4.36E-06	1.30E-05	1.34E-04	1.95E-04	1.07E-04	1.02E-04	1.32E-04	4.74E-04	5.59E-06
46a	Bagasse/Other	All	>250	ESP	1.76E-04	4.36E-06	1.44E-05	1.49E-04	2.17E-04	1.53E-05	1.13E-04	4.77E-04	5.26E-04	6.21E-06
46b	Bagasse/Other	All	>250	ESP/Activated Carbon Adsorption	1.76E-04	1.09E-06	1.30E-05	1.34E-04	1.95E-04	1.53E-05	1.02E-04	4.77E-04	4.74E-04	5.59E-06
46c	Bagasse/Other	All	>250	Wet Scrubber	1.24E-03	4.36E-06	1.30E-05	1.34E-04	1.95E-04	1.07E-04	1.02E-04	1.32E-04	4.74E-04	5.59E-06

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	p-Xylene	Phosphorus	Toluene	Xylenes
47a	Coal	Other	0-10	No Control	1 25E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
48a	Coal	Other	10-100	No Control	1 25E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
48b	Coal	Other	10-100	Cyclone	1 12E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 27E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
48c	Coal	Other	10-100	ESP	1 25E-04	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-05	4 60E-07	2 24E-03	1 87E-05	1 67E-05
48d	Coal	Other	10-100	FF	1 25E-04	5 43E-06	5 08E-07	1 33E-04	3 69E-05	2 53E-05	4 14E-07	1 74E-03	1 69E-05	1 51E-05
49b	Coal	Other	100-250	Cyclone	1 12E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 27E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
49c	Coal	Other	100-250	ESP	1 25E-04	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-05	4 60E-07	2 24E-03	1 87E-05	1 67E-05
50c	Coal	Other	>250	ESP	1 25E-04	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-05	4 60E-07	2 24E-03	1 87E-05	1 67E-05
50f	Coal	Other	>250	FF	1 25E-04	5 43E-06	5 08E-07	1 33E-04	3 69E-05	2 53E-05	4 14E-07	1 74E-03	1 69E-05	1 51E-05
52a	Coal	Wall-fired/PC	10-100	No Control	1 25E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
52b	Coal	Wall-fired/PC	10-100	Cyclone	1 12E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 27E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
52f	Coal	Wall-fired/PC	10-100	Wet Scrubber	8 72E-04	5 43E-06	5 08E-07	1 33E-04	3 69E-05	1 77E-04	4 14E-07	6 21E-04	1 69E-05	1 51E-05
53b	Coal	Wall-fired/PC	100-250	Cyclone	1 12E-03	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 27E-04	4 60E-07	2 48E-03	1 87E-05	1 67E-05
53d	Coal	Wall-fired/PC	100-250	ESP	1 25E-04	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-05	4 60E-07	2 24E-03	1 87E-05	1 67E-05
54c	Coal	Wall-fired/PC	>250	ESP	1 25E-04	5 43E-06	5 64E-07	1 48E-04	4 09E-05	2 53E-05	4 60E-07	2 24E-03	1 87E-05	1 67E-05
55b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone	7 65E-04	1 36E-06		1 52E-03		1 71E-04	3 70E-05	4 58E-03		
56b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone	7 65E-04	1 36E-06		1 52E-03		1 71E-04	3 70E-05	4 58E-03		
57d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF	8 50E-05	1 36E-06		1 37E-03		1 90E-05	3 33E-05	3 21E-03		
58a	Gas	Other	0-10	No Control	1 78E-05		2 46E-06		2 01E-05	1 46E-05	1 21E-06	2 07E-06	2 44E-05	
58d	Gas	Other	0-10	FF	1 78E-06		2 21E-06		1 80E-05	1 46E-06	1 09E-06	1 45E-06	2 20E-05	
58h	Gas	Other	0-10	Wet Scrubber	1 24E-05		2 21E-06		1 80E-05	1 02E-05	1 09E-06	5 16E-07	2 20E-05	
59a	Gas	Other	10-100	No Control	1 78E-05		2 46E-06		2 01E-05	1 46E-05	1 21E-06	2 07E-06	2 44E-05	
59b	Gas	Other	10-100	Cyclone	1 60E-05		2 46E-06		2 01E-05	1 31E-05	1 21E-06	2 07E-06	2 44E-05	
59d	Gas	Other	10-100	FF	1 78E-06		2 21E-06		1 80E-05	1 46E-06	1 09E-06	1 45E-06	2 20E-05	
59e	Gas	Other	10-100	FF/Wet Scrubber	1 78E-06		2 21E-06		1 80E-05	1 46E-06	1 09E-06	5 16E-07	2 20E-05	
59f	Gas	Other	10-100	Wet Scrubber	1 24E-05		2 21E-06		1 80E-05	1 02E-05	1 09E-06	5 16E-07	2 20E-05	
60a	Gas	Other	100-250	No Control	1 78E-05		2 46E-06		2 01E-05	1 46E-05	1 21E-06	2 07E-06	2 44E-05	
60b	Gas	Other	100-250	Cyclone	1 60E-05		2 46E-06		2 01E-05	1 31E-05	1 21E-06	2 07E-06	2 44E-05	
60e	Gas	Other	100-250	FF	1 78E-06		2 21E-06		1 80E-05	1 46E-06	1 09E-06	1 45E-06	2 20E-05	
61a	Gas	Other	>250	No Control	1 78E-05		2 46E-06		2 01E-05	1 46E-05	1 21E-06	2 07E-06	2 44E-05	
62a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control	1 76E-03	7 17E-07		1 49E-04	2 17E-04	1 39E-05	1 13E-04	5 30E-04	5 26E-04	
62b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone	1 59E-03	7 17E-07		1 49E-04	2 17E-04	1 25E-05	1 13E-04	5 30E-04	5 26E-04	
63a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control	1 76E-03	7 17E-07		1 49E-04	2 17E-04	1 39E-05	1 13E-04	5 30E-04	5 26E-04	
63b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone	1 59E-03	7 17E-07		1 49E-04	2 17E-04	1 25E-05	1 13E-04	5 30E-04	5 26E-04	
64d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP	1 76E-04	7 17E-07		1 49E-04	2 17E-04	1 39E-06	1 13E-04	4 77E-04	5 26E-04	
64e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber	1 76E-04	7 17E-07		1 34E-04	1 95E-04	1 39E-06	1 02E-04	1 32E-04	4 74E-04	
65e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber	1 24E-03	7 17E-07		1 34E-04	1 95E-04	9 71E-06	1 02E-04	1 32E-04	4 74E-04	
66a	Distillate Liquid FF	All	0-10	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
67a	Distillate Liquid FF	All	10-100	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
67d	Distillate Liquid FF	All	10-100	FF	4 20E-07	8 87E-09	9 62E-07		2 71E-05	1 04E-07	4 50E-07	1 27E-04	6 33E-06	4 08E-06
68a	Distillate Liquid FF	All	100-250	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
69a	Distillate Liquid FF	All	>250	No Control	4 20E-06	8 87E-09	1 07E-06		3 01E-05	1 04E-06	5 00E-07	1 82E-04	6 25E-06	4 53E-06
69d	Distillate Liquid FF	All	>250	ESP	4 20E-07	8 87E-09	1 07E-06		3 01E-05	1 04E-07	5 00E-07	1 64E-04	6 25E-06	4 53E-06
70b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	1 05E-04	4 94E-06	8 68E-07	5 20E-05	5 46E-05	1 95E-04	1 73E-05		2 70E-05	2 31E-06
72b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	1 16E-05	4 94E-06	8 68E-07	5 20E-05	5 46E-05	2 16E-05	1 73E-05		2 70E-05	2 31E-06

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	Manganese	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	p-Xylene	Phosphorus	Toluene	Xylenes
73a	Wood	Other	0-10	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
73b	Wood	Other	0-10	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
74a	Wood	Other	10-100	No Control	5.63E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	3.26E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
74b	Wood	Other	10-100	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
74e	Wood	Other	10-100	Wet Scrubber	3.94E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	2.28E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
75e	Wood	Other	100-250	Wet Scrubber	3.94E-03	1.97E-06	1.22E-05	1.08E-05	1.72E-04	2.28E-05	5.22E-06	5.47E-05	3.90E-04	1.51E-06
76b	Wood	Wall-fired/PC	0-10	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
77b	Wood	Wall-fired/PC	10-100	Cyclone	5.06E-03	1.97E-06	1.35E-05	1.20E-05	1.91E-04	2.93E-05	5.80E-06	2.19E-04	4.33E-04	1.68E-06
78a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control	5.89E-04	4.36E-06	1.44E-05		5.44E-05	1.53E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
79b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone	5.30E-04	4.36E-06	1.44E-05		5.44E-05	1.38E-04	1.75E-05	5.25E-04	2.34E-05	6.21E-06
79d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP	5.89E-05	4.36E-06	1.44E-05		5.44E-05	1.53E-05	1.75E-05	4.73E-04	2.34E-05	6.21E-06
80a	Residual Liquid FF	All	0-10	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
81a	Residual Liquid FF	All	10-100	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
81g	Residual Liquid FF	All	10-100	Wet Scrubber	9.73E-04	8.80E-06	9.62E-07		2.71E-05	1.44E-03	4.50E-07	4.55E-05	3.56E-05	1.01E-03
82a	Residual Liquid FF	All	100-250	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03
83a	Residual Liquid FF	All	>250	No Control	1.39E-03	8.80E-06	1.07E-06		3.01E-05	2.06E-03	5.00E-07	1.82E-04	3.95E-05	1.12E-03

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	CO	Sulfur Dioxide
1a	Coal	Other	0-10	No Control	2 25E+00	3 08E-02	2 79E+00
1b	Coal	Other	0-10	Cyclone	5 62E-01	3 08E-02	2 79E+00
1c	Coal	Other	0-10	FF	2 25E-02	2 78E-02	2 79E+00
2a	Coal	Other	10-100	No Control	2 25E+00	3 08E-02	2 79E+00
2b	Coal	Other	10-100	Cyclone	5 62E-01	3 08E-02	2 79E+00
2c	Coal	Other	10-100	ESP	4 49E-02	3 08E-02	2 79E+00
2d	Coal	Other	10-100	FF	2 25E-02	2 78E-02	2 79E+00
2e	Coal	Other	10-100	FF/DSI	2 25E-02	2 78E-02	2 79E+00
2f	Coal	Other	10-100	FF/SD	2 25E-02	2 16E-02	2 79E+00
2g	Coal	Other	10-100	Wet Scrubber	1 12E+00	2 78E-02	2 79E+00
3a	Coal	Other	100-250	No Control	2 25E+00	3 08E-02	2 79E+00
3b	Coal	Other	100-250	Cyclone	5 62E-01	3 08E-02	2 79E+00
3c	Coal	Other	100-250	ESP	4 49E-02	3 08E-02	2 79E+00
3d	Coal	Other	100-250	ESP/Wet Scrubber	4 49E-02	2 78E-02	2 79E+00
3e	Coal	Other	100-250	FF	2 25E-02	2 78E-02	2 79E+00
3f	Coal	Other	100-250	FF/DSI	2 25E-02	2 78E-02	2 79E+00
3g	Coal	Other	100-250	FF/Wet Scrubber	2 25E-02	2 78E-02	2 79E+00
3h	Coal	Other	100-250	Wet Scrubber	1 12E+00	2 78E-02	2 79E+00
4a	Coal	Other	>250	No Control	2 25E+00	3 08E-02	2 79E+00
4b	Coal	Other	>250	Cyclone	5 62E-01	3 08E-02	2 79E+00
4c	Coal	Other	>250	ESP	4 49E-02	3 08E-02	2 79E+00
4d	Coal	Other	>250	ESP/DSI	4 49E-02	3 08E-02	2 79E+00
4e	Coal	Other	>250	ESP/Wet Scrubber	4 49E-02	2 78E-02	2 79E+00
4f	Coal	Other	>250	FF	2 25E-02	2 78E-02	2 79E+00
4g	Coal	Other	>250	FF/DSI	2 25E-02	2 78E-02	2 79E+00
4h	Coal	Other	>250	FF/FSI	2 25E-02	2 78E-02	2 79E+00
4i	Coal	Other	>250	FF/SD	2 25E-02	2 16E-02	2 79E+00
4j	Coal	Other	>250	Wet Scrubber	1 12E+00	2 78E-02	2 79E+00
5a	Coal	Wall-fired/PC	0-10	No Control	2 25E+00	3 08E-02	2 79E+00
5b	Coal	Wall-fired/PC	0-10	Cyclone	5 62E-01	3 08E-02	2 79E+00
6a	Coal	Wall-fired/PC	10-100	No Control	2 25E+00	3 08E-02	2 79E+00
6b	Coal	Wall-fired/PC	10-100	Cyclone	5 62E-01	3 08E-02	2 79E+00
6c	Coal	Wall-fired/PC	10-100	ESP	4 49E-02	3 08E-02	2 79E+00
6d	Coal	Wall-fired/PC	10-100	FF	2 25E-02	2 78E-02	2 79E+00
6e	Coal	Wall-fired/PC	10-100	FF/DSI	2 25E-02	2 78E-02	2 79E+00
6f	Coal	Wall-fired/PC	10-100	Wet Scrubber	1 12E+00	2 78E-02	2 79E+00
7a	Coal	Wall-fired/PC	100-250	No Control	2 25E+00	3 08E-02	2 79E+00
7b	Coal	Wall-fired/PC	100-250	Cyclone	5 62E-01	3 08E-02	2 79E+00
7c	Coal	Wall-fired/PC	100-250	Cyclone/Venturi/Packed	5 62E-01	2 78E-02	5 58E-01
7d	Coal	Wall-fired/PC	100-250	ESP	4 49E-02	3 08E-02	2 79E+00
7e	Coal	Wall-fired/PC	100-250	FF	2 25E-02	2 78E-02	2 79E+00
7f	Coal	Wall-fired/PC	100-250	FF/SD	2 25E-02	2 16E-02	2 79E+00
7g	Coal	Wall-fired/PC	100-250	FF/Wet Scrubber	2 25E-02	2 78E-02	2 79E+00
7h	Coal	Wall-fired/PC	100-250	Wet Scrubber	1 12E+00	2 78E-02	2 79E+00

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	CO	Sulfur Dioxide
8a	Coal	Wall-fired/PC	>250	No Control	2.25E+00	3.08E-02	2.79E+00
8c	Coal	Wall-fired/PC	>250	ESP	4.49E-02	3.08E-02	2.79E+00
8d	Coal	Wall-fired/PC	>250	ESP/SD	4.49E-02	2.78E-02	2.79E+00
8e	Coal	Wall-fired/PC	>250	ESP/Venturi/Packed	4.49E-02	2.78E-02	5.58E-01
8f	Coal	Wall-fired/PC	>250	ESP/Wet Scrubber	4.49E-02	2.78E-02	2.79E+00
8g	Coal	Wall-fired/PC	>250	FF	2.25E-02	2.78E-02	2.79E+00
8h	Coal	Wall-fired/PC	>250	FF/DSI	2.25E-02	2.78E-02	2.79E+00
8i	Coal	Wall-fired/PC	>250	FF/SD	2.25E-02	2.16E-02	2.79E+00
8j	Coal	Wall-fired/PC	>250	FF/Wet Scrubber	2.25E-02	2.78E-02	2.79E+00
8k	Coal	Wall-fired/PC	>250	Wet Scrubber	1.12E+00	2.78E-02	2.79E+00
9a	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	No Control	1.47E+00	9.96E-01	2.79E+00
9b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone	3.67E-01	9.96E-01	2.79E+00
10a	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	No Control	1.47E+00	9.96E-01	2.79E+00
10b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone	3.67E-01	9.96E-01	2.79E+00
10c	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	ESP	2.93E-02	9.96E-01	2.79E+00
11a	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Cyclone	3.67E-01	9.96E-01	2.79E+00
11b	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	ESP	2.93E-02	9.96E-01	2.79E+00
11c	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber	7.33E-01	8.96E-01	2.79E+00
11d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF	1.47E-02	8.96E-01	2.79E+00
12a	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone	3.67E-01	9.96E-01	2.79E+00
12b	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Cyclone/Venturi/Packed	3.67E-01	8.96E-01	5.58E-01
12c	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP	2.93E-02	9.96E-01	2.79E+00
12d	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/FSI	2.93E-02	9.96E-01	2.79E+00
12e	Coal/Wood/NFF Liquid/NFF Solid	All	>250	ESP/SD	2.93E-02	8.96E-01	2.79E+00
12f	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF	1.47E-02	8.96E-01	2.79E+00
12g	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/FSI	1.47E-02	8.96E-01	2.79E+00
12h	Coal/Wood/NFF Liquid/NFF Solid	All	>250	FF/Wet Scrubber	1.47E-02	8.96E-01	2.79E+00
12i	Coal/Wood/NFF Liquid/NFF Solid	All	>250	Wet Scrubber	7.33E-01	8.96E-01	2.79E+00
13a	Gas	Other	0-10	No Control	3.51E-03	5.50E+00	
13b	Gas	Other	0-10	Cyclone	8.78E-04	5.50E+00	
13c	Gas	Other	0-10	ESP	7.02E-05	5.50E+00	
13d	Gas	Other	0-10	FF	3.51E-05	4.95E+00	
13e	Gas	Other	0-10	FF/DSI	3.51E-05	4.95E+00	
13f	Gas	Other	0-10	FF/Wet Scrubber	3.51E-05	4.95E+00	
13g	Gas	Other	0-10	Venturi/Packed	1.76E-03	4.95E+00	
13h	Gas	Other	0-10	Wet Scrubber	1.76E-03	4.95E+00	
14a	Gas	Other	10-100	No Control	3.51E-03	5.50E+00	
14b	Gas	Other	10-100	Cyclone	8.78E-04	5.50E+00	
14c	Gas	Other	10-100	ESP	7.02E-05	5.50E+00	
14d	Gas	Other	10-100	FF	3.51E-05	4.95E+00	
14e	Gas	Other	10-100	FF/Wet Scrubber	3.51E-05	4.95E+00	
14f	Gas	Other	10-100	Wet Scrubber	1.76E-03	4.95E+00	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	CO	Sulfur Dioxide
15a	Gas	Other	100-250	No Control	3.51E-03	5.50E+00	
15b	Gas	Other	100-250	Cyclone	8.78E-04	5.50E+00	
15c	Gas	Other	100-250	ESP	7.02E-05	5.50E+00	
15d	Gas	Other	100-250	ESP/Wet Scrubber	7.02E-05	4.95E+00	
15e	Gas	Other	100-250	FF	3.51E-05	4.95E+00	
15f	Gas	Other	100-250	Wet Scrubber	1.76E-03	4.95E+00	
16a	Gas	Other	>250	No Control	3.51E-03	5.50E+00	
16b	Gas	Other	>250	Cyclone	8.78E-04	5.50E+00	
16c	Gas	Other	>250	ESP	7.02E-05	5.50E+00	
16d	Gas	Other	>250	Wet Scrubber	1.76E-03	4.95E+00	
17a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control	6.04E-01	1.06E+00	
17b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone	1.51E-01	1.06E+00	
17c	Gas/Wood/Other Biomass/Liquid FF	All	0-10	FF	6.04E-03	9.56E-01	
17d	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Wet Scrubber	3.02E-01	9.56E-01	
18a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control	6.04E-01	1.06E+00	
18b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone	1.51E-01	1.06E+00	
18c	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP	1.21E-02	1.06E+00	
18d	Gas/Wood/Other Biomass/Liquid FF	All	10-100	ESP/Wet Scrubber	1.21E-02	9.56E-01	
18e	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF	6.04E-03	9.56E-01	
18f	Gas/Wood/Other Biomass/Liquid FF	All	10-100	FF/Wet Scrubber	6.04E-03	9.56E-01	
18g	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Wet Scrubber	3.02E-01	9.56E-01	
19b	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone	1.51E-01	1.06E+00	
19c	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Cyclone/Venturi/Packed	1.51E-01	9.56E-01	
19d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP	1.21E-02	1.06E+00	
19e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber	1.21E-02	9.56E-01	
19f	Gas/Wood/Other Biomass/Liquid FF	All	100-250	Wet Scrubber	3.02E-01	9.56E-01	
20a	Gas/Wood/Other Biomass/Liquid FF	All	>250	Cyclone	1.51E-01	1.06E+00	
20b	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP	1.21E-02	1.06E+00	
20c	Gas/Wood/Other Biomass/Liquid FF	All	>250	ESP/Wet Scrubber	1.21E-02	9.56E-01	
20d	Gas/Wood/Other Biomass/Liquid FF	All	>250	FF	6.04E-03	9.56E-01	
20e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber	3.02E-01	9.56E-01	
21a	Distillate Liquid FF	All	0-10	No Control	1.72E-02	2.95E-02	
21b	Distillate Liquid FF	All	0-10	Cyclone	4.30E-03	2.95E-02	
21d	Distillate Liquid FF	All	0-10	FF	1.72E-04	2.66E-02	
21e	Distillate Liquid FF	All	0-10	Wet Scrubber	8.61E-03	2.66E-02	
22a	Distillate Liquid FF	All	10-100	No Control	1.72E-02	2.95E-02	
22b	Distillate Liquid FF	All	10-100	Cyclone	4.30E-03	2.95E-02	
22c	Distillate Liquid FF	All	10-100	ESP	3.44E-04	2.95E-02	
22d	Distillate Liquid FF	All	10-100	FF	1.72E-04	2.66E-02	
22g	Distillate Liquid FF	All	10-100	Wet Scrubber	8.61E-03	2.66E-02	
23a	Distillate Liquid FF	All	100-250	No Control	1.72E-02	2.95E-02	
23b	Distillate Liquid FF	All	100-250	Cyclone	4.30E-03	2.95E-02	
23d	Distillate Liquid FF	All	100-250	FF	1.72E-04	2.66E-02	
23f	Distillate Liquid FF	All	100-250	Wet Scrubber	8.61E-03	2.66E-02	
24a	Distillate Liquid FF	All	>250	No Control	1.72E-02	2.95E-02	
24d	Distillate Liquid FF	All	>250	ESP	3.44E-04	2.95E-02	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	CO	Sulfur Dioxide
25a	NFF Liquid/NFF Solid/Gas	All	0-10	No Control	2.56E+00	9.84E-02	
25b	NFF Liquid/NFF Solid/Gas	All	0-10	Cyclone	6.40E-01	9.84E-02	
26a	NFF Liquid/NFF Solid/Gas	All	10-100	No Control	2.56E+00	9.84E-02	
26b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	6.40E-01	9.84E-02	
26c	NFF Liquid/NFF Solid/Gas	All	10-100	ESP	5.12E-02	9.84E-02	
26d	NFF Liquid/NFF Solid/Gas	All	10-100	FF	2.56E-02	8.86E-02	
26e	NFF Liquid/NFF Solid/Gas	All	10-100	FF/SD	2.56E-02	6.89E-02	
26f	NFF Liquid/NFF Solid/Gas	All	10-100	Wet Scrubber	1.28E+00	8.86E-02	
27a	NFF Liquid/NFF Solid/Gas	All	100-250	No Control	2.56E+00	9.84E-02	
27b	NFF Liquid/NFF Solid/Gas	All	100-250	ESP	5.12E-02	9.84E-02	
27c	NFF Liquid/NFF Solid/Gas	All	100-250	ESP/Wet Scrubber	5.12E-02	8.86E-02	
27d	NFF Liquid/NFF Solid/Gas	All	100-250	FF	2.56E-02	8.86E-02	
27e	NFF Liquid/NFF Solid/Gas	All	100-250	Cyclone	6.40E-01	9.84E-02	
27f	NFF Liquid/NFF Solid/Gas	All	100-250	Wet Scrubber	1.28E+00	8.86E-02	
28a	NFF Liquid/NFF Solid/Gas	All	>250	No Control	2.56E+00	9.84E-02	
28b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	5.12E-02	9.84E-02	
28c	NFF Liquid/NFF Solid/Gas	All	>250	Wet Scrubber	1.28E+00	8.86E-02	
29a	Wood	Other	0-10	No Control	1.46E+00	4.97E-01	
29b	Wood	Other	0-10	Cyclone	3.65E-01	4.97E-01	
29c	Wood	Other	0-10	FF	1.46E-02	4.47E-01	
30a	Wood	Other	10-100	No Control	1.46E+00	4.97E-01	
30b	Wood	Other	10-100	Cyclone	3.65E-01	4.97E-01	
30c	Wood	Other	10-100	ESP	2.92E-02	4.97E-01	
30d	Wood	Other	10-100	FF	1.46E-02	4.47E-01	
30e	Wood	Other	10-100	Wet Scrubber	7.30E-01	4.47E-01	
31a	Wood	Other	100-250	No Control	1.46E+00	4.97E-01	
31b	Wood	Other	100-250	Cyclone	3.65E-01	4.97E-01	
31c	Wood	Other	100-250	Cyclone/Venturi/Packed	3.65E-01	4.47E-01	
31d	Wood	Other	100-250	ESP	2.92E-02	4.97E-01	
31e	Wood	Other	100-250	Wet Scrubber	7.30E-01	4.47E-01	
32a	Wood	Other	>250	No Control	1.46E+00	4.97E-01	
32b	Wood	Other	>250	Cyclone	3.65E-01	4.97E-01	
32c	Wood	Other	>250	ESP	2.92E-02	4.97E-01	
32d	Wood	Other	>250	Wet Scrubber	7.30E-01	4.47E-01	
33a	Wood	Wall-fired/PC	0-10	No Control	1.46E+00	4.97E-01	
33b	Wood	Wall-fired/PC	0-10	Cyclone	3.65E-01	4.97E-01	
34a	Wood	Wall-fired/PC	10-100	No Control	1.46E+00	4.97E-01	
34b	Wood	Wall-fired/PC	10-100	Cyclone	3.65E-01	4.97E-01	
34c	Wood	Wall-fired/PC	10-100	FF	1.46E-02	4.47E-01	
34d	Wood	Wall-fired/PC	10-100	Wet Scrubber	7.30E-01	4.47E-01	
35a	Wood	Wall-fired/PC	>250	ESP	2.92E-02	4.97E-01	
35b	Wood	Wall-fired/PC	>250	ESP/Wet Scrubber	2.92E-02	4.47E-01	
36a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control	1.13E+00	4.23E-01	
36b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Cyclone	2.83E-01	4.23E-01	
36c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	ESP	2.26E-02	4.23E-01	
36e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	Wet Scrubber	5.66E-01	3.80E-01	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	SO ₂	Sulfur Dioxide
37a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	No Control	1.13E+00	4.23E-01	
37b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone	2.83E-01	4.23E-01	
37c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone/Venturi/Packed	2.83E-01	3.80E-01	
37d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP	2.26E-02	4.23E-01	
37e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	FF	1.13E-02	3.80E-01	
37f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Wet Scrubber	5.66E-01	3.80E-01	
38a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone	2.83E-01	4.23E-01	
38b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Cyclone/Venturi/Packed	2.83E-01	3.80E-01	
38c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	ESP	2.26E-02	4.23E-01	
38d	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF	1.13E-02	3.80E-01	
38e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/FFSI	1.13E-02	3.80E-01	
38f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	FF/Wet Scrubber	1.13E-02	3.80E-01	
38g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	100-250	Wet Scrubber	5.66E-01	3.80E-01	
39a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	No Control	1.13E+00	4.23E-01	
39b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Cyclone	2.83E-01	4.23E-01	
39c	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP	2.26E-02	4.23E-01	
39e	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	ESP/Wet Scrubber	2.26E-02	3.80E-01	
39f	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	FF	1.13E-02	3.80E-01	
39g	Wood/Other Biomass/NFF Liquid/NFF Solid	All	>250	Wet Scrubber	5.66E-01	3.80E-01	
40a	Residual Liquid FF	All	0-10	No Control	2.73E-01	7.70E-03	
40b	Residual Liquid FF	All	0-10	Cyclone	6.83E-02	7.70E-03	
40d	Residual Liquid FF	All	0-10	FF	2.73E-03	6.93E-03	
41a	Residual Liquid FF	All	10-100	No Control	2.73E-01	7.70E-03	
41b	Residual Liquid FF	All	10-100	Cyclone	6.83E-02	7.70E-03	
41c	Residual Liquid FF	All	10-100	ESP	5.47E-03	7.70E-03	
41d	Residual Liquid FF	All	10-100	FF	2.73E-03	6.93E-03	
41g	Residual Liquid FF	All	10-100	Wet Scrubber	1.37E-01	6.93E-03	
42a	Residual Liquid FF	All	100-250	No Control	2.73E-01	7.70E-03	
42b	Residual Liquid FF	All	100-250	Cyclone	6.83E-02	7.70E-03	
42c	Residual Liquid FF	All	100-250	ESP	5.47E-03	7.70E-03	
42d	Residual Liquid FF	All	100-250	FF	2.73E-03	6.93E-03	
42e	Residual Liquid FF	All	100-250	Venturi/Packed	1.37E-01	6.93E-03	
42f	Residual Liquid FF	All	100-250	Wet Scrubber	1.37E-01	6.93E-03	
43a	Residual Liquid FF	All	>250	No Control	2.73E-01	7.70E-03	
43b	Residual Liquid FF	All	>250	Cyclone	6.83E-02	7.70E-03	
43d	Residual Liquid FF	All	>250	ESP	5.47E-03	7.70E-03	
44a	Bagasse/Other	All	10-100	Cyclone	2.83E-01	1.06E+00	
44b	Bagasse/Other	All	10-100	Wet Scrubber	5.66E-01	9.56E-01	
45a	Bagasse/Other	All	100-250	No Control	1.13E+00	1.06E+00	
45b	Bagasse/Other	All	100-250	Cyclone	2.83E-01	1.06E+00	
45c	Bagasse/Other	All	100-250	Wet Scrubber	5.66E-01	9.56E-01	
46a	Bagasse/Other	All	>250	ESP	2.26E-02	1.06E+00	
46b	Bagasse/Other	All	>250	ESP/Activated Carbon Adsorption	2.26E-02	9.56E-01	
46c	Bagasse/Other	All	>250	Wet Scrubber	5.66E-01	9.56E-01	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	CO	Sulfur Dioxide
47a	Coal	Other	0-10	No Control	2.25E+00	3.08E-02	2.79E+00
48a	Coal	Other	10-100	No Control	2.25E+00	3.08E-02	2.79E+00
48b	Coal	Other	10-100	Cyclone	5.62E-01	3.08E-02	2.79E+00
48c	Coal	Other	10-100	ESP	4.49E-02	3.08E-02	2.79E+00
48d	Coal	Other	10-100	FF	2.25E-02	2.78E-02	2.79E+00
49b	Coal	Other	100-250	Cyclone	5.62E-01	3.08E-02	2.79E+00
49c	Coal	Other	100-250	ESP	4.49E-02	3.08E-02	2.79E+00
50c	Coal	Other	>250	ESP	4.49E-02	3.08E-02	2.79E+00
50f	Coal	Other	>250	FF	2.25E-02	2.78E-02	2.79E+00
52a	Coal	Wall-fired/PC	10-100	No Control	2.25E+00	3.08E-02	2.79E+00
52b	Coal	Wall-fired/PC	10-100	Cyclone	5.62E-01	3.08E-02	2.79E+00
52f	Coal	Wall-fired/PC	10-100	Wet Scrubber	1.12E+00	2.78E-02	2.79E+00
53b	Coal	Wall-fired/PC	100-250	Cyclone	5.62E-01	3.08E-02	2.79E+00
53d	Coal	Wall-fired/PC	100-250	ESP	4.49E-02	3.08E-02	2.79E+00
54c	Coal	Wall-fired/PC	>250	ESP	4.49E-02	3.08E-02	2.79E+00
55b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	Cyclone	3.67E-01	9.96E-01	2.79E+00
56b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	Cyclone	3.67E-01	9.96E-01	2.79E+00
57d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	FF	1.47E-02	8.96E-01	2.79E+00
58a	Gas	Other	0-10	No Control	3.51E-03	5.50E+00	
58d	Gas	Other	0-10	FF	3.51E-05	4.95E+00	
58h	Gas	Other	0-10	Wet Scrubber	1.76E-03	4.95E+00	
59a	Gas	Other	10-100	No Control	3.51E-03	5.50E+00	
59b	Gas	Other	10-100	Cyclone	8.78E-04	5.50E+00	
59d	Gas	Other	10-100	FF	3.51E-05	4.95E+00	
59e	Gas	Other	10-100	FF/Wet Scrubber	3.51E-05	4.95E+00	
59f	Gas	Other	10-100	Wet Scrubber	1.76E-03	4.95E+00	
60a	Gas	Other	100-250	No Control	3.51E-03	5.50E+00	
60b	Gas	Other	100-250	Cyclone	8.78E-04	5.50E+00	
60e	Gas	Other	100-250	FF	3.51E-05	4.95E+00	
61a	Gas	Other	>250	No Control	3.51E-03	5.50E+00	
62a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	No Control	6.04E-01	1.06E+00	
62b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	Cyclone	1.51E-01	1.06E+00	
63a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	No Control	6.04E-01	1.06E+00	
63b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	Cyclone	1.51E-01	1.06E+00	
64d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP	1.21E-02	1.06E+00	
64e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	ESP/Wet Scrubber	1.21E-02	9.58E-01	
65e	Gas/Wood/Other Biomass/Liquid FF	All	>250	Wet Scrubber	3.02E-01	9.58E-01	
66a	Distillate Liquid FF	All	0-10	No Control	1.72E-02	2.95E-02	
67a	Distillate Liquid FF	All	10-100	No Control	1.72E-02	2.95E-02	
67d	Distillate Liquid FF	All	10-100	FF	1.72E-04	2.66E-02	
68a	Distillate Liquid FF	All	100-250	No Control	1.72E-02	2.95E-02	
69a	Distillate Liquid FF	All	>250	No Control	1.72E-02	2.95E-02	
69d	Distillate Liquid FF	All	>250	ESP	3.44E-04	2.95E-02	
70b	NFF Liquid/NFF Solid/Gas	All	10-100	Cyclone	6.40E-01	9.84E-02	
72b	NFF Liquid/NFF Solid/Gas	All	>250	ESP	5.12E-02	9.84E-02	

Appendix A. HAP and Criteria Pollutant Emission Factors (lb/MMBtu) for Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Control Level	PM	CO	Sulfur Dioxide
73a	Wood	Other	0-10	No Control	1.46E+00	4.97E-01	
73b	Wood	Other	0-10	Cyclone	3.65E-01	4.97E-01	
74a	Wood	Other	10-100	No Control	1.46E+00	4.97E-01	
74b	Wood	Other	10-100	Cyclone	3.65E-01	4.97E-01	
74c	Wood	Other	10-100	Wet Scrubber	7.30E-01	4.47E-01	
75a	Wood	Other	100-250	Wet Scrubber	7.30E-01	4.47E-01	
76a	Wood	Wall-fired/PC	0-10	Cyclone	3.65E-01	4.97E-01	
77a	Wood	Wall-fired/PC	10-100	Cyclone	3.65E-01	4.97E-01	
78a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	0-10	No Control	1.13E+00	4.23E-01	
79a	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	Cyclone	2.83E-01	4.23E-01	
79b	Wood/Other Biomass/NFF Liquid/NFF Solid	All	10-100	ESP	2.26E-02	4.23E-01	
80a	Residual Liquid FF	All	0-10	No Control	2.73E-01	7.70E-03	
81a	Residual Liquid FF	All	10-100	No Control	2.73E-01	7.70E-03	
81b	Residual Liquid FF	All	10-100	Wet Scrubber	1.37E-01	6.93E-03	
82a	Residual Liquid FF	All	100-250	No Control	2.73E-01	7.70E-03	
83a	Residual Liquid FF	All	>250	No Control	2.73E-01	7.70E-03	

Appendix B

National Baseline Emission Estimates for the Source Category

(See Excel spreadsheet “BaselineEFappxAB.xls”)

Appendix B. Baseline Emissions in Mg/Yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese	
1a	Coal	Other	0-10	4	No Control	48	0	5.9E-04	6.1E-03	1.4E-02	2.3E-03	9.2E-02	5.6E-03	7.7E-03	1.3E-02	9.0E+00	1.0E-01	1.6E-06	1.6E-03	9.9E-07	7.0E-04	8.1E-03	0.0E+00	0.0E+00	2.4E+01	1.7E+00	1.3E-01	0.0E+00	5.5E-01
1b	Coal	Other	0-10	4	Cyclone	32	0	4.0E-04	4.1E-03	9.5E-03	1.6E-03	5.5E-02	3.8E-03	4.6E-03	8.0E-03	6.0E+00	6.1E-02	1.1E-06	1.0E-03	6.6E-07	4.7E-04	5.4E-03	0.0E+00	1.6E+01	1.1E+00	7.8E-02	0.0E+00	3.3E-01	
1c	Coal	Other	0-10	4	FF	3	0	3.3E-05	3.4E-04	8.0E-04	1.3E-04	5.7E-04	3.2E-04	4.8E-05	8.3E-05	4.0E-01	6.3E-01	8.9E-08	8.9E-05	5.5E-08	4.0E-05	4.6E-04	0.0E+00	1.0E+00	7.5E-01	8.1E-04	0.0E+00	3.4E-03	
2a	Coal	Other	10-100	54	No Control	154	0	2.6E-02	2.7E-01	6.2E-01	1.0E-01	4.0E+00	2.4E-01	3.3E-01	5.7E-01	3.9E+02	4.4E-01	6.8E-05	6.8E-02	4.3E-05	3.0E-02	3.5E-01	0.0E+00	1.0E+00	2.9E+03	2.1E+02	1.4E+01	0.0E+00	2.4E-01
2b	Coal	Other	10-100	54	Cyclone	436	0	7.3E-02	7.5E-01	1.8E+00	2.9E-01	1.0E+01	6.9E-01	8.5E-01	1.5E+00	1.1E+03	1.1E+01	1.9E-04	1.9E-01	1.2E-04	8.6E-02	1.0E+00	0.0E+00	2.9E+03	2.1E+02	1.4E+01	0.0E+00	6.0E-01	
2c	Coal	Other	10-100	54	ESP	123	0	2.1E-02	2.1E-01	4.9E-01	8.1E-02	3.2E-01	2.0E-01	2.7E-02	4.6E-02	2.8E+02	3.5E-01	5.5E-05	5.4E-02	3.4E-05	2.4E-02	2.8E-01	0.0E+00	8.1E+02	5.3E+01	4.5E-01	0.0E+00	1.9E+00	
2d	Coal	Other	10-100	54	FF	181	0	2.7E-02	2.8E-01	6.6E-01	1.1E-01	4.7E-01	2.6E-01	3.9E-02	6.9E-02	3.2E+02	5.1E-01	7.2E-05	7.2E-02	4.5E-05	3.2E-02	3.7E-01	0.0E+00	1.2E+03	6.1E+01	6.6E-01	0.0E+00	2.8E+00	
2e	Coal	Other	10-100	54	FF/DSI	5	0	7.5E-04	7.7E-03	1.8E-02	3.0E-03	1.3E-03	7.1E-03	1.1E-03	1.9E-03	6.4E+00	1.4E-03	2.0E-06	2.0E-03	1.2E-06	8.9E-04	1.0E-02	0.0E+00	1.7E+01	1.2E+00	1.8E-02	0.0E+00	7.7E-02	
2f	Coal	Other	10-100	54	FF/SD	5	0	5.9E-04	6.0E-03	1.4E-02	2.3E-03	1.3E-03	5.6E-03	1.1E-04	1.9E-04	1.3E+00	1.4E-03	1.6E-06	1.5E-03	9.7E-07	6.9E-04	8.0E-03	0.0E+00	3.3E+00	2.4E-01	1.8E-03	0.0E+00	7.7E-03	
2g	Coal	Other	10-100	54	Wet Scrubber	15	0	2.3E-03	2.3E-02	5.4E-02	8.9E-03	2.7E-01	2.1E-02	2.3E-02	3.9E-02	9.5E+00	3.0E-01	6.0E-06	6.0E-03	3.7E-06	2.7E-03	3.1E-02	0.0E+00	2.5E+01	1.8E+00	3.8E-01	0.0E+00	1.6E+00	
3a	Coal	Other	100-250	166	No Control	46	0	2.4E-02	2.4E-01	5.7E-01	9.3E-02	3.7E+00	2.2E-01	3.1E-01	5.3E-01	3.6E+02	4.0E+00	6.3E-05	6.3E-02	3.9E-05	2.8E-02	3.2E-01	0.0E+00	9.3E+02	6.8E+01	5.1E+00	0.0E+00	5.3E+00	
3b	Coal	Other	100-250	166	Cyclone	166	0	8.5E-02	8.8E-01	2.1E+00	3.4E-01	1.2E+01	8.1E-01	1.0E+00	1.7E+00	1.3E+03	1.3E+01	2.3E-04	2.3E-01	1.4E-04	1.0E-01	1.2E+00	0.0E+00	3.4E+03	2.5E+02	1.7E+01	0.0E+00	7.1E-01	
3c	Coal	Other	100-250	166	ESP	112	0	5.8E-02	5.9E-01	1.4E+00	2.3E-01	8.9E-01	5.5E-01	7.5E-02	1.3E-01	7.9E+02	9.8E-01	1.5E-04	1.5E-01	9.5E-05	6.8E-02	7.9E-01	0.0E+00	2.3E+03	1.5E+02	1.3E+00	0.0E+00	5.3E+00	
3d	Coal	Other	100-250	166	ESP/Wet Scrubber	2	0	9.3E-04	9.5E-03	2.2E-02	3.6E-03	1.6E-02	8.8E-03	1.3E-03	2.3E-03	3.9E+00	1.7E-02	2.5E-06	2.5E-03	1.5E-06	1.1E-03	1.3E-02	0.0E+00	1.0E+01	7.4E-01	2.2E-02	0.0E+00	9.5E-02	
3e	Coal	Other	100-250	166	FF	166	0	7.4E-02	7.6E-01	1.8E+00	2.9E-01	1.3E+00	7.0E-01	1.1E-01	1.8E-01	8.8E+02	1.4E+00	2.0E-04	2.0E-01	1.2E-04	8.8E-02	1.0E+00	0.0E+00	3.3E+03	1.7E-02	1.8E+00	0.0E+00	7.6E+00	
3f	Coal	Other	100-250	166	FF/DSI	160	0	1.9E-03	1.9E-02	4.5E-02	7.3E-03	3.2E-02	1.8E-02	2.7E-03	4.6E-03	1.6E+00	1.4E-03	4.9E-06	4.9E-03	3.1E-06	2.2E-03	2.5E-02	0.0E+00	2.0E+01	1.5E+00	4.5E-02	0.0E+00	1.9E-01	
3g	Coal	Other	100-250	166	FF/Wet Scrubber	4	0	1.9E-03	1.9E-02	4.5E-02	7.3E-03	3.2E-02	1.8E-02	2.7E-03	4.6E-03	1.6E+00	1.4E-03	4.9E-06	4.9E-03	3.1E-06	2.2E-03	2.5E-02	0.0E+00	2.0E+01	1.5E+00	4.5E-02	0.0E+00	1.9E-01	
3h	Coal	Other	100-250	166	Wet Scrubber	15	0	6.9E-03	7.1E-02	1.7E-01	2.7E-02	8.3E-01	6.6E-02	7.0E-02	1.2E-01	2.9E+01	9.2E-01	1.8E-05	1.8E-02	1.2E-05	8.2E-03	9.5E-02	0.0E+00	7.6E+01	5.5E+00	1.2E+00	0.0E+00	5.0E+00	
4a	Coal	Other	>250	565	No Control	24	0	4.2E-02	4.3E-01	1.0E+00	1.7E-01	6.5E+00	4.0E-01	5.5E-01	9.4E-01	6.4E+02	7.1E+00	1.1E-04	1.1E-01	7.0E-05	5.0E-02	5.7E-01	0.0E+00	1.7E+03	1.2E-02	9.1E+00	0.0E+00	3.9E-01	
4b	Coal	Other	>250	565	Cyclone	14	0	2.5E-02	2.5E-01	5.9E-01	9.6E-02	3.4E-00	2.3E-01	2.9E-01	4.9E-01	3.7E+02	7.1E+00	1.1E-04	1.1E-01	7.0E-05	5.0E-02	5.7E-01	0.0E+00	1.7E+03	1.2E-02	9.1E+00	0.0E+00	3.9E-01	
4c	Coal	Other	>250	565	ESP	40	0	7.0E-02	7.2E-01	1.7E+00	2.8E-01	1.1E+00	6.6E-01	9.1E-02	1.6E-01	9.6E+02	1.2E+00	1.9E-04	1.9E-01	1.2E-05	8.2E-03	9.5E-02	0.0E+00	9.7E+02	7.0E-01	4.8E+00	0.0E+00	3.2E-01	
4d	Coal	Other	>250	565	ESP/DSI	2	0	3.5E-03	3.6E-02	8.4E-02	1.4E-02	5.4E-02	3.3E-02	4.5E-03	7.8E-03	2.7E+01	5.9E-02	9.3E-06	9.3E-03	5.8E-06	4.1E-03	4.8E-02	0.0E+00	6.9E+01	5.0E+00	7.6E-02	0.0E+00	3.2E-01	
4e	Coal	Other	>250	565	ESP/Wet Scrubber	4	0	6.3E-03	6.5E-02	1.5E-01	2.5E-02	1.1E-01	6.0E-02	9.1E-03	1.6E-02	2.7E+01	1.2E-01	1.7E-05	1.7E-02	1.0E-05	7.5E-03	8.6E-02	0.0E+00	6.9E+01	5.0E+00	1.5E-01	0.0E+00	6.4E-01	
4f	Coal	Other	>250	565	FF	56	0	8.8E-02	9.1E-01	2.1E+00	2.5E-01	1.5E+00	8.4E-01	1.3E-01	2.2E-01	1.0E+03	1.7E+00	2.3E-04	2.3E-01	1.5E-04	1.0E-01	1.2E+00	0.0E+00	3.9E+03	2.0E+02	1.5E+00	0.0E+00	9.0E+00	
4g	Coal	Other	>250	565	FF/DSI	40	0	6.3E-02	6.5E-01	1.5E+00	2.5E-01	1.1E+00	6.0E-01	9.1E-02	1.6E-01	5.3E+02	1.2E+00	1.7E-04	1.7E-01	1.0E-05	7.5E-03	8.6E-02	0.0E+00	6.9E+01	5.0E+00	1.5E-01	0.0E+00	6.4E-01	
4h	Coal	Other	>250	565	FF/FSI	10	0	1.6E-02	1.6E-01	3.8E-01	6.2E-02	2.7E-01	1.5E-01	2.3E-02	3.9E-02	1.3E+02	3.0E-01	4.2E-05	4.2E-02	2.6E-05	1.9E-02	2.1E-01	0.0E+00	3.5E+02	2.5E+01	3.8E-01	0.0E+00	1.6E+00	
4i	Coal	Other	>250	565	FF/SD	6	0	7.4E-03	7.6E-02	1.8E-01	2.9E-02	1.6E-02	7.0E-02	1.4E-03	2.3E-03	1.6E+01	1.8E-02	1.9E-05	1.9E-02	1.2E-05	8.7E-03	1.0E-01	0.0E+00	4.1E+01	3.0E+00	2.3E-02	0.0E+00	9.7E-02	
4j	Coal	Other	>250	565	Wet Scrubber	8	0	1.3E-02	1.3E-01	3.0E-01	5.0E-02	1.5E+00	1.2E-01	1.3E-01	2.2E-01	5.3E+01	1.7E+00	3.3E-05	3.3E-02	2.1E-05	1.5E-02	1.7E-01	0.0E+00	2.4E+00	1.8E-01	1.3E-02	0.0E+00	5.7E-02	
5a	Coal	Other	0-10	2	No Control	10	0	6.2E-05	6.4E-04	1.5E-03	2.4E-04	9.6E-03	5.9E-03	8.0E-04	1.4E-04	9.4E-01	1.1E-02	1.6E-07	1.6E-04	1.0E-07	7.3E-05	8.5E-04	0.0E+00	4.9E-01	3.6E-02	2.4E-03	0.0E+00	5.7E-02	
5b	Coal	Other	0-10	2	Cyclone	2	0	1.2E-05	1.3E-04	3.0E-04	4.9E-05	1.7E-03	1.2E-04	1.4E-04	2.5E-04	1.9E-01	1.9E-03	3.3E-08	3.3E-05	2.1E-08	1.5E-05	1.7E-04	0.0E+00	4.9E-01	3.6E-02	2.4E-03	0.0E+00	5.7E-02	
6a	Coal	Other	10-100	57	No Control	14	0	2.5E-03	2.5E-02	5.9E-02	9.7E-03	3.8E-01	2.3E-02	3.2E-02	5.5E-02	3.8E+01	4.2E-01	6.6E-06	6.5E-03	4.1E-06	2.9E-03	3.4E-02	0.0E+00	9.8E+01	7.1E+00	5.4E-01	0.0E+00	2.3E+00	
6b	Coal	Other	10-100	57	Cyclone	5	0	8.8E-04	9.1E-03	2.1E-02	3.5E-03	1.2E-01	8.4E-03	1.0E-02	1.8E-02	1.3E-01	1.3E-01	2.3E-06	2.3E-03	1.5E-06	1.0E-03	1.2E-02	0.0E+00	3.5E+01	2.5E+00	1.7E-01	0.0E+00	7.3E-01	
6c	Coal	Other	10-100	57	ESP	37	0	6.5E-03	6.7E-02	1.6E-01	2.6E-02	1.6E-02	6.2E-02	8.5E-03	1.5E-02	8.9E+01	1.1E-01	1.7E-05	1.7E-02	1.1E-05	7.7E-03	8.9E-02	0.0E+00	2.6E-02	1.7E+01	1.4E-01	0.0E+00	6.0E-01	
6d	Coal	Other	10-100	57	FF	28	0	4.4E-03	4.6E-02	1.1E-01	1.8E-02	7.6E-02	4.2E-02	6.4E-03	1.1E-02	5.9E+01	8.4E-02	1.2E-05	1.2E-02	7.4E-06	5.3E-03	6.1E-02	0.0E+00	2.0E+02	9.9E+00	1.1E-01	0.0E+00	4.5E-01	
6e	Coal	Other	10-100	57	FF/DSI	2	0	3.2E-04	3.3E-03	7.6E-03	1.3E-03	5.5E-03	3.0E-03	4.6E-04	7.9E-04	2.7E+00	6.0E-02	8.4E-07	8.4E-04	5.3E-07	3.8E-04	4.3E-03	0.0E+00	7.0E+00	5.1E-01	7.7E-03	0.0E+00	3.2E-02	
6f	Coal	Other	10-100	57	Wet Scrubber	12	0	1.9E-03	2.0E-02	4.6E-02	7.5E-03	2.3E-01	1.8E-02	1.9E-02	3.3E-02	8.1E+00	2.5E-01	5.1E-06	5.0E-03	3.2E-06	2.3E-03	2.6E-02	0.0E+00	2.1E+01	1.5E+00	3.2E-01	0.0E+00	1.4E+00	
7a	Coal	Other	100-250	186	No Control	12	0	6.9E-03	7.1E-02	1.7E-01	2.7E-02	4.0E-01	2.7E-02	3.4E-02	5.8E-02	1.1E+02	1.2E+00	1.8E-05	1.8E-02	1.4E-06	8.2E-03	9.4E-02	0.0E+00	2.7E+02	2.0E-01	1.5E+00	0.0E+00	6.4E+00	
7b	Coal	Other	100-250	186	Cyclone	5	0	2.9E-03	3.0E-02	6.9E-02	1.1E-02	4.0E-01	2.7E-02	3.4E-02	5.8E-02	4.4E+01	4.4E-01	7.6E-06	7.6E-03	4.8E-06	3.4E-03	3.5E-02	0.0E+00	1.1E+02	8.3E-02	3.5E-01	0.0E+00	2.4E+00	
7c	Coal	Other	100-250	186	Cyclone/Venturi/Pac	5	0	2.6E-03	2.7E-02	6.2E-02	1.0E-02	2.																	

Appendix B. Baseline Emissions in Mg/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/h) ¹	Avg Capacity (MMBtu/h)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
7h	Coal	Wall-fired/P	100-250	186	Wet Scrubber	14	0	7.3E-03	7.5E-02	1.7E-01	2.9E-02	8.7E-01	6.9E-02	7.3E-02	1.3E-01	3.1E+01	9.6E-01	1.9E-05	1.9E-02	1.2E-05	8.6E-03	9.9E-02	0.0E+00	8.0E+01	5.8E+00	1.2E+00	0.0E+00	5.2E+00
8a	Coal	Wall-fired/P	>250	600	No Control	17	0	3.2E-02	3.3E-01	7.8E-01	1.2E-01	4.8E+00	3.0E-01	4.1E-01	7.0E-01	4.8E+02	5.4E+00	8.4E-05	8.4E-02	5.2E-05	3.7E-02	4.3E-01	0.0E+00	1.2E+03	9.1E+01	6.9E+00	0.0E+00	2.9E+01
8c	Coal	Wall-fired/P	>250	600	ESP	196	0	3.6E-01	3.7E+00	8.8E+00	1.4E+00	5.6E+00	3.5E+00	4.7E-01	8.1E-01	4.5E+03	6.2E+00	9.7E-04	9.6E-01	6.0E-04	4.3E-01	5.0E+00	0.0E+00	1.4E+04	9.4E+02	7.9E+00	0.0E+00	3.3E+01
8d	Coal	Wall-fired/P	>250	600	ESP/SD	5	0	8.4E-03	8.6E-02	2.0E-01	3.3E-02	2.9E-02	7.9E-02	2.4E-03	4.1E-03	1.4E+01	3.2E-02	2.2E-05	2.2E-02	1.4E-05	9.9E-03	1.4E-05	0.0E+00	3.7E+01	2.7E+00	4.0E-02	0.0E+00	1.7E-01
8e	Coal	Wall-fired/P	>250	600	ESP/Venturi/Packed	7	0	1.2E-02	1.2E-01	2.8E-01	4.6E-02	2.0E-01	1.1E-01	1.7E-02	2.9E-02	2.0E+00	2.2E-01	3.1E-05	3.1E-02	1.9E-05	1.4E-02	1.6E-01	0.0E+00	5.1E+00	3.7E-01	2.8E-01	0.0E+00	1.2E+00
8f	Coal	Wall-fired/P	>250	600	ESP/Wet Scrubber	12	0	2.0E-02	2.1E-01	4.8E-01	7.9E-02	3.4E-01	1.9E-01	2.9E-02	5.0E-02	8.5E+01	3.8E-01	5.3E-05	5.3E-02	3.3E-05	2.4E-02	2.7E-01	0.0E+00	2.2E+02	1.6E+01	4.8E-01	0.0E+00	2.0E+00
8g	Coal	Wall-fired/P	>250	600	FF	36	0	6.0E-02	6.2E-01	1.4E+00	2.4E-01	1.0E+00	5.7E-01	8.7E-02	1.5E-01	7.1E+02	1.1E+00	1.6E-04	1.6E-01	5.3E-05	5.3E-02	3.3E-05	0.0E+00	2.6E+03	1.3E+02	1.5E+00	0.0E+00	6.1E+00
8h	Coal	Wall-fired/P	>250	600	FF/DSI	12	0	2.0E-02	2.1E-01	4.8E-01	7.9E-02	3.4E-01	1.9E-01	2.9E-02	5.0E-02	1.7E+02	3.8E-01	5.3E-05	5.3E-02	3.3E-05	2.4E-02	2.7E-01	0.0E+00	4.4E+02	3.2E+01	4.8E-01	0.0E+00	2.0E+00
8i	Coal	Wall-fired/P	>250	600	FF/SD	2	0	2.6E-03	2.7E-02	6.3E-02	1.0E-02	5.7E-03	2.5E-02	4.8E-04	8.3E-04	5.7E+00	6.3E-03	6.9E-06	6.9E-03	4.3E-06	3.1E-03	3.6E-02	0.0E+00	1.5E+01	1.1E+00	8.1E-03	0.0E+00	3.4E-02
8j	Coal	Wall-fired/P	>250	600	FF/Wet Scrubber	2	0	3.3E-03	3.4E-02	8.0E-02	1.3E-02	5.7E-02	3.2E-02	4.8E-03	8.3E-03	1.4E+01	6.3E-02	8.9E-06	8.9E-03	5.5E-06	4.0E-03	4.6E-02	0.0E+00	3.7E+01	2.7E+00	8.1E-02	0.0E+00	3.4E-01
8k	Coal	Wall-fired/P	>250	600	Wet Scrubber	2	0	3.3E-03	3.4E-02	8.0E-02	1.3E-02	4.0E-01	3.2E-02	3.4E-02	5.8E-02	1.4E+01	4.4E-01	8.9E-06	8.9E-03	5.5E-06	4.0E-03	4.6E-02	0.0E+00	3.7E+01	2.7E+00	5.7E-01	0.0E+00	2.4E+00
9a	Liquid/NFF Solid	All	0-10	6	No Control	2	0	0.0E+00	9.4E-04	4.3E-02	2.2E-02	1.4E-03	8.7E-02	5.0E-05	1.9E-04	1.0E-01	3.2E-03	2.4E-08	1.2E-03	2.3E-08	0.0E+00	9.5E-02	0.0E+00	3.0E-01	3.0E-01	3.7E-03	0.0E+00	2.2E-02
9b	Liquid/NFF Solid	All	0-10	6	Cyclone	5	0	0.0E+00	2.4E-03	1.1E-01	5.5E-02	3.1E-03	2.2E-01	1.1E-04	4.2E-04	2.6E-01	7.1E-03	6.0E-08	3.1E-03	5.8E-08	0.0E+00	2.4E-01	0.0E+00	7.4E-01	7.6E-01	8.4E-03	0.0E+00	5.0E-02
10a	Liquid/NFF Solid	All	10-100	35	No Control	8	0	0.0E+00	2.7E-02	1.2E+00	6.3E-01	4.0E-02	2.5E+00	1.4E-03	5.4E-03	2.9E+00	9.1E-02	6.8E-07	3.6E-02	6.6E-07	0.0E+00	2.7E+00	0.0E+00	8.5E+00	8.7E+00	1.1E-01	0.0E+00	6.3E-01
10b	Liquid/NFF Solid	All	10-100	35	Cyclone	54	0	0.0E+00	1.8E-01	8.3E+00	4.3E+00	2.4E-01	1.7E+01	8.7E-03	3.3E-02	2.0E+01	5.5E-01	4.6E-06	2.4E-01	4.5E-06	0.0E+00	1.8E+01	0.0E+00	5.8E+01	5.8E+01	6.5E-01	0.0E+00	3.9E+00
10c	Liquid/NFF Solid	All	10-100	35	ESP	5	0	0.0E+00	1.7E-02	7.7E-01	3.9E-01	2.5E-03	1.6E+00	9.0E-05	3.3E-04	1.6E+00	5.7E-03	4.3E-07	2.2E-02	4.1E-07	0.0E+00	1.7E+00	0.0E+00	5.3E+00	4.9E+00	6.7E-03	0.0E+00	4.0E-02
11a	Liquid/NFF Solid	All	100-250	173	Cyclone	3	0	0.0E+00	5.4E-02	2.5E+00	1.3E+00	7.2E-02	5.0E+00	2.6E-03	9.7E-03	5.9E+00	1.6E-01	1.4E-06	7.2E-02	1.3E-06	0.0E+00	5.5E+00	0.0E+00	1.7E+01	1.7E+01	1.9E-01	0.0E+00	1.1E+00
11b	Liquid/NFF Solid	All	100-250	173	ESP	11	0	0.0E+00	2.0E-01	9.1E+00	4.7E+00	2.9E-02	1.8E+01	1.1E-03	3.9E-03	1.9E+01	6.7E-02	5.0E-06	2.6E-01	4.9E-06	0.0E+00	2.0E+01	0.0E+00	6.3E+01	5.8E+01	7.9E-02	0.0E+00	4.7E-01
11c	Liquid/NFF Solid	All	100-250	173	Wet Scrubber	2	0	0.0E+00	3.3E-02	1.5E+00	7.6E-01	3.7E-02	3.0E+00	1.4E-03	5.0E-03	9.8E-01	8.5E-02	8.2E-07	4.3E-02	8.0E-07	0.0E+00	3.3E+00	0.0E+00	2.9E+00	2.9E+00	1.0E-01	0.0E+00	6.0E-01
11d	Liquid/NFF Solid	All	100-250	173	FF	2	0	0.0E+00	3.3E-02	1.5E+00	7.6E-01	5.4E-03	3.0E+00	1.9E-04	7.2E-04	2.8E+00	1.2E-02	8.2E-07	4.3E-02	8.0E-07	0.0E+00	3.3E+00	0.0E+00	1.1E+01	8.1E+00	1.4E-02	0.0E+00	8.5E-02
12a	Liquid/NFF Solid	All	>250	565	Cyclone	1	0	0.0E+00	6.4E-02	2.9E+00	1.5E+00	8.6E-02	6.0E+00	3.1E-03	1.2E-02	7.0E+00	1.9E-01	1.6E-06	8.6E-02	1.6E-06	0.0E+00	6.5E+00	0.0E+00	2.0E+01	2.1E+01	2.3E-01	0.0E+00	1.4E+00
12b	Liquid/NFF Solid	All	>250	565	CycloneVenturi/Pac	4	0	0.0E+00	2.3E-01	1.1E+01	5.4E+00	1.9E-01	2.1E+01	6.9E-03	2.6E-02	2.8E-01	4.3E-01	5.9E-06	3.1E-01	5.7E-06	0.0E+00	2.3E+01	0.0E+00	8.2E-01	8.3E-01	5.1E-01	0.0E+00	3.0E+00
12c	Liquid/NFF Solid	All	>250	565	ESP	47	0	0.0E+00	3.0E+00	1.4E+02	7.1E+01	4.5E-01	2.8E+02	1.6E-02	6.0E-02	3.0E+02	1.0E+00	7.7E-05	4.0E+00	7.4E-05	0.0E+00	3.1E+02	0.0E+00	9.6E+02	8.8E+02	1.2E+00	0.0E+00	7.1E+00
12d	Liquid/NFF Solid	All	>250	565	ESP/FSI	1	0	0.0E+00	6.4E-02	2.9E+00	1.5E+00	9.5E-03	6.0E+00	3.4E-04	1.3E-03	3.5E+00	2.2E-02	1.6E-06	8.6E-02	1.6E-06	0.0E+00	6.5E+00	0.0E+00	1.0E+01	1.0E+01	2.8E-02	0.0E+00	1.5E-01
12e	Liquid/NFF Solid	All	>250	565	ESP/SD	4	0	0.0E+00	2.3E-01	1.1E+01	5.4E+00	7.6E-03	2.1E+01	2.8E-04	1.0E-03	2.8E+00	1.7E-02	5.9E-06	3.1E-01	5.7E-06	0.0E+00	2.3E+01	0.0E+00	8.2E+00	8.3E+00	2.0E-02	0.0E+00	1.2E-01
12i	Liquid/NFF Solid	All	>250	565	FF	5	0	0.0E+00	2.9E-01	1.3E+01	6.8E+00	4.8E-02	2.7E+01	1.7E-03	6.4E-03	2.5E+01	1.1E-01	7.4E-06	3.8E-01	7.1E-06	0.0E+00	2.9E+01	0.0E+00	1.0E+02	7.3E+01	1.3E-01	0.0E+00	7.6E-01
12g	Liquid/NFF Solid	All	>250	565	FF/FSI	7	0	0.0E+00	4.1E-01	1.9E+01	9.5E+00	6.7E-02	3.8E+01	2.4E-03	9.0E-03	2.5E+01	1.5E-01	1.0E-05	5.4E-01	1.0E-05	0.0E+00	4.1E+01	0.0E+00	7.1E+01	7.3E+01	1.8E-01	0.0E+00	1.1E+00

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
12h	Coal/Wood/NFF	All	>250	565	FF/Wet Scrubber	2	0	0.0E+00	1.2E-01	5.3E+00	2.7E+00	1.9E-02	1.1E+01	6.9E-04	2.6E-03	3.5E+00	4.3E-02	2.9E-06	1.5E-01	2.8E-06	0.0E+00	1.2E+01	0.0E+00	1.0E+01	1.0E+01	5.1E-02	0.0E+00	3.0E-01
12i	Liquid/NFF Solid	All	>250	565	Wet Scrubber	6	0	0.0E+00	3.5E-01	1.6E+01	8.1E+00	4.0E-01	3.2E+01	1.4E-02	5.4E-02	1.1E+01	9.1E-01	8.9E-06	4.8E-01	8.5E-06	0.0E+00	3.5E+01	0.0E+00	3.1E+01	3.1E+01	1.1E+00	0.0E+00	6.4E+00
13a	Gas	Other	0-10	3	No Control	18469	8268	0.0E+00	2.4E+01	3.5E+01	1.8E+00	3.1E-01	2.8E-01	0.0E+00	2.3E-01	0.0E+00	2.6E-01	1.1E-06	0.0E+00	1.2E-05	1.3E-01	6.2E+01	0.0E+00	2.3E+00	0.0E+00	4.6E-01	1.7E-01	3.4E+00
13b	Gas	Other	0-10	3	Cyclone	90	29	0.0E+00	1.1E-01	1.6E-01	8.2E-03	1.3E-03	1.3E-03	0.0E+00	9.2E-04	0.0E+00	1.1E-03	5.1E-09	0.0E+00	5.4E-08	5.8E-04	2.8E-01	0.0E+00	1.0E-02	0.0E+00	1.8E-03	7.7E-04	1.3E-02
13c	Gas	Other	0-10	3	ESP	9	110	0.0E+00	1.1E-01	1.6E-01	8.2E-03	1.4E-04	1.3E-03	0.0E+00	1.0E-04	0.0E+00	1.2E-04	5.1E-09	0.0E+00	5.4E-08	5.8E-04	2.8E-01	0.0E+00	1.0E-02	0.0E+00	1.8E-03	7.7E-04	1.3E-02
13d	Gas	Other	0-10	3	FF	182	64	0.0E+00	2.0E-01	2.9E-01	1.5E-02	2.9E-04	2.4E-03	0.0E+00	2.1E-04	0.0E+00	2.4E-04	9.4E-09	0.0E+00	1.0E-07	1.1E-03	5.2E-01	0.0E+00	2.2E-02	0.0E+00	4.2E-04	1.4E-03	3.1E-03
13e	Gas	Other	0-10	3	FF/DSI	5	0	0.0E+00	4.0E-03	5.9E-03	3.1E-04	5.9E-06	4.8E-05	0.0E+00	4.3E-06	0.0E+00	4.9E-06	1.9E-10	0.0E+00	2.1E-09	2.2E-05	1.1E-02	0.0E+00	2.2E-04	0.0E+00	8.6E-06	2.9E-05	6.3E-05
13f	Gas	Other	0-10	3	FF/Wet Scrubber	9	0	0.0E+00	7.2E-03	1.1E-02	5.6E-04	1.1E-05	8.6E-05	0.0E+00	7.7E-06	0.0E+00	8.9E-06	3.4E-10	0.0E+00	3.7E-09	3.9E-05	1.9E-02	0.0E+00	2.0E-04	0.0E+00	1.5E-05	5.2E-05	1.1E-04
13g	Gas	Other	0-10	3	Venturi/Packed	9	0	0.0E+00	7.2E-03	1.1E-02	5.6E-04	5.3E-05	8.6E-05	0.0E+00	3.9E-05	0.0E+00	4.5E-05	3.4E-10	0.0E+00	3.7E-09	3.9E-05	1.9E-02	0.0E+00	7.9E-06	0.0E+00	7.7E-05	5.2E-05	5.7E-04
14a	Gas	Other	0-10	3	Wet Scrubber	51	128	0.0E+00	1.4E-01	2.1E-01	1.1E-02	1.5E-03	1.7E-03	0.0E+00	1.1E-03	0.0E+00	1.2E-03	6.8E-09	0.0E+00	7.0E-05	7.8E-04	3.8E-01	0.0E+00	3.9E-03	0.0E+00	2.2E-03	1.0E-03	1.6E-02
14b	Gas	Other	10-100	33	Cyclone	9732	3994	0.0E+00	1.4E+02	2.0E+02	1.1E+01	1.8E+00	1.6E+00	0.0E+00	1.3E+00	0.0E+00	1.5E+00	6.5E-06	0.0E+00	7.0E-05	7.5E-01	3.6E+02	0.0E+00	1.3E+01	0.0E+00	2.6E+00	9.9E-01	1.9E+01
14c	Gas	Other	10-100	33	ESP	119	6	0.0E+00	1.2E+00	1.8E+00	9.6E-02	1.5E-02	1.5E-02	0.0E+00	1.1E-02	0.0E+00	1.2E-02	5.9E-08	0.0E+00	6.4E-07	6.8E-03	3.3E+00	0.0E+00	1.2E-01	0.0E+00	2.2E-02	9.1E-03	1.6E-01
14d	Gas	Other	10-100	33	FF	23	0	0.0E+00	2.3E-01	3.4E-01	1.8E-02	3.0E-04	2.7E-03	0.0E+00	2.2E-04	0.0E+00	2.5E-04	1.1E-08	0.0E+00	1.2E-07	1.2E-03	6.0E-01	0.0E+00	2.3E-02	0.0E+00	4.4E-04	1.7E-03	3.2E-03
14e	Gas	Other	10-100	33	FF	69	29	0.0E+00	8.8E-01	1.3E+00	6.8E-02	1.3E-03	1.0E-02	0.0E+00	9.4E-04	0.0E+00	1.1E-03	4.2E-08	0.0E+00	4.5E-07	4.8E-03	2.3E+00	0.0E+00	9.6E-02	0.0E+00	2.5E-04	6.4E-03	1.4E-02
14f	Gas	Other	10-100	33	FF/Wet Scrubber	13	0	0.0E+00	1.2E-01	1.7E-01	9.0E-02	1.7E-04	1.4E-03	0.0E+00	1.3E-04	0.0E+00	1.4E-04	5.6E-09	0.0E+00	6.0E-08	6.4E-04	3.1E-01	0.0E+00	3.2E-03	0.0E+00	2.5E-04	6.4E-03	1.4E-02
15a	Gas	Other	100-250	164	No Control	83	145	0.0E+00	2.0E+00	3.0E+00	1.6E-01	2.1E-02	2.4E-02	0.0E+00	1.5E-02	0.0E+00	1.9E-02	9.7E-08	0.0E+00	1.0E-06	1.1E-02	5.4E+00	0.0E+00	5.6E-02	0.0E+00	3.1E-02	1.5E-02	2.2E-01
15b	Gas	Other	100-250	164	Cyclone	1042	474	0.0E+00	7.6E+01	1.1E+02	5.9E+00	1.0E+00	9.1E-01	0.0E+00	7.4E-01	0.0E+00	8.5E-01	3.6E-06	0.0E+00	4.5E-07	4.2E-01	2.0E+02	0.0E+00	7.5E+00	0.0E+00	1.5E+00	5.5E-01	1.1E+01
15c	Gas	Other	100-250	164	ESP	21	0	0.0E+00	1.1E+00	1.6E+00	6.6E-02	1.1E-02	1.3E-02	0.0E+00	9.2E-03	0.0E+00	1.1E-02	5.0E-08	0.0E+00	5.4E-07	5.8E-03	2.8E+00	0.0E+00	8.4E-02	0.0E+00	1.6E-02	6.2E-03	1.2E-02
15d	Gas	Other	100-250	164	ESP/Wet Scrubber	17	0	0.0E+00	8.5E-01	1.3E-01	6.6E-02	1.1E-03	1.0E-02	0.0E+00	8.3E-04	0.0E+00	9.5E-04	1.1E-08	0.0E+00	4.7E-07	4.7E-03	2.2E+00	0.0E+00	8.4E-02	0.0E+00	1.6E-02	6.2E-03	1.2E-02
15e	Gas	Other	100-250	164	FF	9	0	0.0E+00	4.1E-01	6.0E-01	3.1E-02	5.9E-04	4.9E-03	0.0E+00	4.4E-04	0.0E+00	5.0E-04	1.9E-08	0.0E+00	2.1E-07	2.2E-03	1.1E+00	0.0E+00	4.5E-02	0.0E+00	8.7E-04	3.0E-03	6.4E-03
16a	Gas	Other	>250	520	No Control	473	176	0.0E+00	1.1E+02	1.7E+02	8.8E+00	1.5E+00	1.4E+00	0.0E+00	1.1E+00	0.0E+00	1.3E+00	5.5E-06	0.0E+00	5.9E-05	6.3E-01	3.0E+02	0.0E+00	1.1E+01	0.0E+00	2.2E+00	8.3E-01	1.6E+01
16b	Gas	Other	>250	520	Cyclone	6	13	0.0E+00	3.4E+00	5.0E+00	2.6E-01	4.0E-02	4.0E-02	0.0E+00	2.9E-02	0.0E+00	3.4E-02	1.6E-07	0.0E+00	1.7E-06	1.8E-02	8.8E+00	0.0E+00	3.3E-01	0.0E+00	5.8E-02	2.4E-02	4.3E-01
16c	Gas	Other	>250	520	ESP	13	0	0.0E+00	2.3E+00	3.4E+00	1.8E-01	3.0E-03	2.7E-02	0.0E+00	2.2E-03	0.0E+00	2.6E-03	1.1E-07	0.0E+00	1.2E-06	1.3E-02	6.0E+00	0.0E+00	2.3E-01	0.0E+00	4.4E-03	1.7E-02	3.3E-02
16d	Gas	Other	>250	520	Wet Scrubber	8	11	0.0E+00	3.0E+00	4.5E+00	2.3E-01	3.1E-02	3.6E-02	0.0E+00	2.3E-02	0.0E+00	2.6E-02	1.4E-07	0.0E+00	1.5E-06	1.7E-02	7.9E+00	0.0E+00	8.3E-02	0.0E+00	4.5E-02	2.2E-02	3.3E-01
17a	Biomass/Liquid/FF	All	0-10	6	No Control	10	0	1.7E-03	1.5E-02	4.6E-02	6.3E-03	2.9E-04	1.2E+00	1.4E-05	6.7E-04	2.3E-02	3.4E-03	0.0E+00	5.9E-03	0.0E+00	5.1E-04	6.2E-02	0.0E+00	5.7E-01	0.0E+00	5.1E-03	0.0E+00	2.3E-01
17b	Biomass/Liquid/FF	All	0-10	6	Cyclone	11	0	1.9E-03	1.6E-02	5.1E-02	7.0E-03	2.9E-04	1.4E+00	1.4E-05	6.7E-04	2.5E-02	3.4E-03	0.0E+00	6.5E-03	0.0E+00	5.6E-04	6.9E-02	0.0E+00	6.3E-01	0.0E+00	5.1E-03	0.0E+00	2.3E-01
17c	Biomass/Liquid/FF	All	0-10	6	FF	2	0	3.1E-04	2.6E-03	8.3E-03	1.1E-03	5.9E-06	2.2E-01	2.8E-07	1.3E-05	3.2E-03	6.8E-05	0.0E+00	1.1E-03	0.0E+00	9.2E-05	1.1E-02	0.0E+00	1.1E-01	0.0E+00	1.0E-04	0.0E+00	4.6E-03
17d	Biomass/Liquid/FF	All	0-10	6	Wet Scrubber	2	0	3.1E-04	2.6E-03	8.3E-03	1.1E-03	4.1E-05	2.2E-01	2.0E-06	9.4E-05	1.1E-03	4.8E-04	0.0E+00	1.1E-03	0.0E+00	9.2E-05	1.1E-02	0.0E+00	2.9E-02	0.0E+00	7.1E-04	0.0E+00	3.2E-02
18a	Biomass/Liquid/FF	All	10-100	45	No Control	12	0	1.8E-02	1.6E-01	4.9E-01	6.7E-02	3.1E-03	1.3E+01	1.5E-04	7.1E-03	2.4E-01	3.6E-02	0.0E+00	6.3E-02	0.0E+00	5.4E-03	6.6E-01	0.0E+00	6.0E+00	0.0E+00	5.4E-02	0.0E+00	2.4E+00
18b	Biomass/Liquid/FF	All	10-100	45	Cyclone	66	0	1.0E-01	8.5E-01	2.7E+00	3.7E-01	1.5E-02	7.2E+01	7.4E-04	3.5E-02	1.3E+00	1.8E-01	0.0E+00	3.5E-01	0.0E+00	3.0E-02	3.6E+00	0.0E+00	3.3E+01	0.0E+00	2.7E-01	0.0E+00	1.2E+01
18c	Biomass/Liquid/FF	All	10-100	45	ESP	13	0	2.0E-02	1.7E-01	5.3E-01	7.2E-02	3.4E-04	1.4E+01	1.6E-05	7.7E-04	2.3E-01	3.9E-03	0.0E+00	6.9E-02	0.0E+00	5.8E-03	7.2E-01	0.0E+00	6.5E+00	0.0E+00	5.9E-03	0.0E+00	2.6E-01

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
18d	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	ESP/Wet Scrubber	1	0	1.4E-03	1.2E-02	3.7E-02	5.0E-03	2.6E-05	9.8E-01	1.2E-06	5.9E-05	5.0E-03	3.0E-04	0.0E+00	4.7E-03	0.0E+00	4.0E-04	5.0E-02	0.0E+00	1.3E-01	0.0E+00	4.5E-04	0.0E+00	2.0E-02
18e	Biomass/Liquid FF Gas/Wood/Other	All	10-100	45	FF	1	0	1.4E-03	1.2E-02	3.7E-02	5.0E-03	2.6E-05	9.8E-01	1.2E-06	5.9E-05	1.4E-02	3.0E-04	0.0E+00	4.7E-03	0.0E+00	4.0E-04	5.0E-02	0.0E+00	5.0E-01	0.0E+00	4.5E-04	0.0E+00	2.0E-02
18f	Biomass/Liquid FF Gas/Wood/Other	All	10-100	45	FF/Wet Scrubber	1	0	1.4E-03	1.2E-02	3.7E-02	5.0E-03	2.6E-05	9.8E-01	1.2E-06	5.9E-05	5.0E-03	3.0E-04	0.0E+00	4.7E-03	0.0E+00	4.0E-04	5.0E-02	0.0E+00	1.3E-01	0.0E+00	4.5E-04	0.0E+00	2.0E-02
18g	Biomass/Liquid FF Gas/Wood/Other	All	10-100	45	Wet Scrubber	3	0	4.1E-03	3.5E-02	1.1E-01	1.5E-02	5.4E-04	2.9E+00	2.6E-05	1.2E-03	1.5E-02	6.3E-03	0.0E+00	1.4E-02	0.0E+00	1.2E-03	1.5E-01	0.0E+00	3.8E-01	0.0E+00	9.5E-03	0.0E+00	4.3E-01
19b	Biomass/Liquid FF Gas/Wood/Other	All	100-250	178	Cyclone	5	0	3.4E-02	2.9E-01	9.2E-01	1.3E-01	5.3E-03	2.5E+01	2.5E-04	1.2E-02	4.6E-01	6.1E-02	0.0E+00	1.2E-01	0.0E+00	1.0E-02	1.3E+00	0.0E+00	1.1E+01	0.0E+00	9.2E-02	0.0E+00	4.1E+00
19c	Biomass/Liquid FF Gas/Wood/Other	All	100-250	178	Cyclone/Venturi/Pac	1	0	6.2E-03	5.3E-02	1.7E-01	2.3E-02	5.9E-04	4.4E+00	2.8E-05	1.3E-03	9.1E-04	6.8E-03	0.0E+00	2.1E-02	0.0E+00	1.8E-03	2.3E-01	0.0E+00	2.3E-02	0.0E+00	1.0E-02	0.0E+00	4.6E-01
19d	Biomass/Liquid FF Gas/Wood/Other	All	100-250	178	ESP	12	0	8.3E-02	7.1E-01	2.2E+00	3.0E-01	1.4E-03	5.9E+01	6.8E-05	3.2E-03	9.8E-01	1.6E-02	0.0E+00	2.9E-01	0.0E+00	2.5E-02	3.0E+00	0.0E+00	2.7E+01	0.0E+00	2.5E-02	0.0E+00	1.1E+00
19e	Biomass/Liquid FF Gas/Wood/Other	All	100-250	178	ESP/Wet Scrubber	1	0	6.2E-03	5.3E-02	1.7E-01	2.3E-02	1.2E-04	4.4E+00	5.6E-06	2.7E-04	2.3E-02	1.4E-03	0.0E+00	2.1E-02	0.0E+00	1.4E-03	2.3E-01	0.0E+00	5.7E-01	0.0E+00	2.0E-03	0.0E+00	9.2E-02
19f	Biomass/Liquid FF Gas/Wood/Other	All	100-250	178	Wet Scrubber	15	0	9.3E-02	7.9E-01	2.5E+00	3.4E-01	1.2E-02	6.7E+01	5.9E-04	2.8E-02	3.4E-01	1.4E-01	0.0E+00	3.2E-01	0.0E+00	2.8E-02	3.4E+00	0.0E+00	8.6E+00	0.0E+00	2.1E-01	0.0E+00	9.7E+00
20a	Biomass/Liquid FF Gas/Wood/Other	All	>250	394	Cyclone	5	0	7.9E-02	6.8E-01	2.1E+00	2.9E-01	1.2E-02	5.7E+01	5.8E-04	2.8E-02	1.0E+00	1.4E-01	0.0E+00	2.7E-01	0.0E+00	2.3E-02	2.9E+00	0.0E+00	2.6E+01	0.0E+00	2.1E-01	0.0E+00	9.5E+00
20b	Biomass/Liquid FF Gas/Wood/Other	All	>250	394	ESP	11	0	1.7E-01	1.5E+00	4.7E+00	6.4E-01	3.0E-03	1.3E+02	1.4E-04	6.8E-03	2.1E+00	6.3E-03	0.0E+00	9.8E-02	0.0E+00	8.5E-03	1.0E+00	0.0E+00	2.6E+00	0.0E+00	5.2E-02	0.0E+00	2.3E+00
20c	Biomass/Liquid FF Gas/Wood/Other	All	>250	394	ESP/Wet Scrubber	2	0	2.8E-02	2.4E-01	7.6E-01	1.0E-01	5.4E-04	2.0E+01	2.6E-05	1.2E-03	1.0E-01	6.3E-03	0.0E+00	9.8E-02	0.0E+00	8.5E-03	1.0E+00	0.0E+00	2.6E+00	0.0E+00	9.4E-03	0.0E+00	4.2E-01
20d	Biomass/Liquid FF Gas/Wood/Other	All	>250	394	FF	3	0	4.3E-02	3.7E-01	1.1E+00	1.6E-01	8.1E-04	3.1E+01	3.9E-05	1.9E-03	4.4E-01	9.4E-03	0.0E+00	1.3E-01	0.0E+00	1.3E-02	1.6E+00	0.0E+00	1.6E+01	0.0E+00	1.4E-02	0.0E+00	6.4E-01
20e	Biomass/Liquid FF	All	>250	394	Wet Scrubber	24	0	3.4E-01	2.9E+00	9.2E+00	1.3E+00	4.5E-02	2.5E+02	2.2E-03	1.0E-01	1.3E+00	5.3E-01	0.0E+00	1.2E+00	0.0E+00	1.0E-01	1.2E+01	0.0E+00	3.2E+01	0.0E+00	7.9E-01	0.0E+00	3.6E+01
21a	Distillate Liquid FF	All	0-10	3	No Control	1900	166	0.0E+00	7.4E-01	2.9E-01	1.4E-01	8.5E-03	2.2E-01	3.1E-03	3.1E-03	3.1E+01	1.0E-02	8.5E-07	0.0E+00	3.1E-06	4.6E-03	2.1E+00	0.0E+00	1.0E+00	0.0E+00	3.1E-02	0.0E+00	5.9E-02
21b	Distillate Liquid FF	All	0-10	3	Cyclone	13	5	0.0E+00	6.4E-03	2.5E-03	1.2E-03	6.7E-05	1.9E-03	2.5E-05	2.7E-01	8.1E-05	7.4E-09	0.0E+00	2.7E-08	4.0E-05	1.9E-02	0.0E+00	8.8E-03	0.0E+00	2.5E-04	0.0E+00	4.7E-04	
21d	Distillate Liquid FF	All	0-10	3	FF	42	10	0.0E+00	1.7E-02	6.5E-03	3.2E-03	2.1E-05	5.0E-03	7.9E-06	7.9E-06	5.4E-01	2.6E-05	1.9E-08	0.0E+00	7.0E-08	1.0E-04	4.8E-02	0.0E+00	2.5E-02	0.0E+00	7.9E-05	0.0E+00	1.5E-04
21e	Distillate Liquid FF	All	0-10	3	Wet Scrubber	6	5	0.0E+00	3.5E-03	1.4E-03	6.7E-04	3.2E-05	1.1E-03	1.2E-05	1.2E-05	4.1E-02	3.9E-05	4.1E-09	0.0E+00	1.5E-08	2.2E-05	1.0E-02	0.0E+00	1.3E-03	0.0E+00	1.2E-04	0.0E+00	2.2E-04
22a	Distillate Liquid FF	All	10-100	29	No Control	787	101	0.0E+00	3.1E+00	1.2E+00	5.8E-01	3.5E-02	9.1E-01	1.3E-02	1.3E-02	1.3E+02	4.3E-02	3.5E-06	0.0E+00	1.3E-05	1.9E-02	8.9E-02	0.0E+00	4.2E+00	0.0E+00	1.3E-01	0.0E+00	2.5E-01
22b	Distillate Liquid FF	All	10-100	29	Cyclone	6	0	0.0E+00	2.1E-02	8.1E-03	3.9E-03	2.2E-04	6.2E-03	7.9E-05	7.9E-05	8.6E-01	2.6E-04	2.4E-08	0.0E+00	8.6E-08	1.3E-04	6.0E-02	0.0E+00	2.8E-02	0.0E+00	7.9E-04	0.0E+00	1.5E-03
22c	Distillate Liquid FF	All	10-100	29	ESP	6	0	0.0E+00	2.1E-02	8.1E-03	3.9E-03	2.4E-05	6.2E-03	8.8E-06	8.8E-06	7.7E-01	2.9E-05	2.4E-08	0.0E+00	8.6E-08	1.3E-04	6.0E-02	0.0E+00	2.8E-02	0.0E+00	7.9E-04	0.0E+00	1.5E-03
22d	Distillate Liquid FF	All	10-100	29	FF	9	0	0.0E+00	2.8E-02	1.1E-02	5.3E-03	3.6E-05	8.3E-03	6.2E-05	1.3E-05	9.0E-01	4.4E-05	3.2E-08	0.0E+00	1.2E-07	1.7E-04	8.1E-02	0.0E+00	4.2E-02	0.0E+00	1.3E-04	0.0E+00	2.5E-04
22a	Distillate Liquid FF	All	100-250	157	Wet Scrubber	78	15	0.0E+00	1.9E-02	7.3E-03	3.3E-01	2.0E-02	5.2E-01	7.4E-03	7.4E-03	7.2E+01	2.4E-02	2.0E-06	0.0E+00	7.2E-06	1.1E-02	5.4E-02	0.0E+00	2.4E+00	0.0E+00	7.4E-02	0.0E+00	1.4E-01
23b	Distillate Liquid FF	All	100-250	157	Cyclone	3	0	0.0E+00	5.6E-02	2.2E-02	1.1E-02	5.8E-04	1.7E-02	2.1E-04	2.1E-04	2.3E+00	7.1E-04	6.5E-08	0.0E+00	2.3E-07	3.5E-04	1.6E-01	0.0E+00	7.6E-02	0.0E+00	2.1E-03	0.0E+00	4.1E-03
23d	Distillate Liquid FF	All	100-250	157	FF	3	0	0.0E+00	5.0E-02	2.0E-02	9.6E-03	6.5E-05	1.5E-02	2.4E-05	2.4E-05	1.6E+00	7.9E-05	5.0E-08	0.0E+00	2.1E-07	3.1E-04	1.5E-01	0.0E+00	7.6E-02	0.0E+00	2.4E-04	0.0E+00	4.5E-04
23f	Distillate Liquid FF	All	100-250	157	Wet Scrubber	6	0	0.0E+00	1.0E-01	3.9E-02	1.9E-02	9.1E-04	3.0E-02	3.3E-04	3.3E-04	1.2E+00	1.1E-03	1.2E-07	0.0E+00	4.2E-07	6.3E-04	2.9E-01	0.0E+00	3.8E-02	0.0E+00	3.3E-03	0.0E+00	6.3E-03
24a	Distillate Liquid FF	All	>250	355	No Control	53	51	0.0E+00	4.4E+00	1.7E+00	8.4E-01	5.1E-02	1.3E+00	1.9E-02	1.9E-02	1.8E+02	6.2E-02	5.1E-06	0.0E+00	1.8E-05	2.7E-02	1.3E+01	0.0E+00	6.0E+00	0.0E+00	1.9E-01	0.0E+00	3.5E-01
24d	Distillate Liquid FF	All	>250	355	ESP	3	0	0.0E+00	1.3E-01	4.9E-02	2.4E-02	1.5E-04	3.8E-02	5.4E-05	5.4E-05	4.7E+00	1.8E-04	1.5E-07	0.0E+00	5.3E-07	7.9E-04	3.7E-01	0.0E+00	1.7E-01	0.0E+00	5.4E-04	0.0E+00	1.0E-03

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No. of Boilers	No. of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
25a	NFF Liquid/NFF	All	0-10	6	No Control	2	4	0.0E+00	2.1E-03	2.3E-03	7.1E-02	1.2E-04	1.2E-03	0.0E+00	3.4E-04	0.0E+00	1.1E-02	1.2E-10	0.0E+00	3.2E-09	4.6E-05	0.0E+00	0.0E+00	2.5E+00	0.0E+00	1.2E-02	0.0E+00	9.9E-03
25b	NFF Liquid/NFF	All	0-10	6	Cyclone	4	0	0.0E+00	1.4E-03	1.6E-03	7.1E-03	7.2E-05	8.0E-04	0.0E+00	2.0E-04	0.0E+00	6.5E-03	8.1E-11	0.0E+00	2.1E-09	4.6E-05	0.0E+00	0.0E+00	1.7E+00	0.0E+00	7.2E-03	0.0E+00	5.9E-03
26a	NFF Liquid/NFF	All	10-100	58	No Control	29	3	0.0E+00	1.2E-01	1.3E-01	6.1E-01	6.9E-03	6.9E-02	0.0E+00	1.9E-02	0.0E+00	6.2E-01	7.0E-09	0.0E+00	1.1E-07	3.9E-03	0.0E+00	0.0E+00	1.4E+02	0.0E+00	6.9E-01	0.0E+00	5.7E-01
26b	NFF Liquid/NFF	All	10-100	58	Cyclone	10	0	0.0E+00	3.7E-02	4.2E-02	1.9E-01	1.9E-03	2.2E-02	0.0E+00	5.4E-03	0.0E+00	1.8E-01	2.2E-09	0.0E+00	5.8E-08	1.2E-03	0.0E+00	0.0E+00	4.5E+01	0.0E+00	1.9E-01	0.0E+00	1.6E-01
26c	NFF Liquid/NFF	All	10-100	58	ESP	3	0	0.0E+00	1.1E-02	1.3E-02	5.7E-02	6.4E-05	6.5E-03	0.0E+00	1.8E-04	0.0E+00	5.8E-03	6.6E-10	0.0E+00	1.7E-08	3.7E-04	0.0E+00	0.0E+00	1.3E+01	0.0E+00	6.5E-03	0.0E+00	5.3E-03
26d	NFF Liquid/NFF	All	10-100	58	FF	7	0	0.0E+00	2.3E-02	2.6E-02	1.2E-01	1.5E-04	1.4E-02	0.0E+00	4.2E-04	0.0E+00	1.4E-02	1.4E-09	0.0E+00	3.6E-08	7.8E-04	0.0E+00	0.0E+00	3.1E+01	0.0E+00	1.5E-02	0.0E+00	1.2E-02
26e	NFF Liquid/NFF	All	10-100	58	FF/SD	3	0	0.0E+00	7.8E-03	8.8E-03	4.0E-02	6.4E-06	4.5E-03	0.0E+00	1.8E-05	0.0E+00	5.8E-04	4.6E-10	0.0E+00	1.2E-08	2.6E-04	0.0E+00	0.0E+00	1.3E+00	0.0E+00	6.5E-04	0.0E+00	5.3E-04
26f	NFF Liquid/NFF	All	10-100	58	Wet Scrubber	1	0	0.0E+00	3.4E-03	3.8E-03	1.7E-02	1.5E-04	1.9E-03	0.0E+00	4.2E-04	0.0E+00	1.4E-02	2.0E-10	0.0E+00	5.2E-09	1.1E-04	0.0E+00	0.0E+00	1.1E+00	0.0E+00	1.5E-02	0.0E+00	1.2E-02
27a	NFF Liquid/NFF	All	100-250	161	No Control	21	4	0.0E+00	2.4E-01	2.7E-01	1.2E+00	1.4E-02	1.4E-01	0.0E+00	3.9E-02	0.0E+00	1.3E+00	0.0E+00	0.0E+00	3.7E-07	7.9E-03	0.0E+00	0.0E+00	2.9E+02	0.0E+00	1.4E+00	0.0E+00	1.1E+00
27b	NFF Liquid/NFF	All	100-250	161	ESP	7	0	0.0E+00	6.7E-02	7.5E-02	3.4E-01	3.9E-04	3.9E-02	0.0E+00	1.1E-03	0.0E+00	3.5E-02	3.9E-09	0.0E+00	1.0E-07	2.2E-03	0.0E+00	0.0E+00	8.1E+01	0.0E+00	3.9E-02	0.0E+00	3.2E-02
27c	NFF Liquid/NFF	All	100-250	161	ESP/Wet Scrubber	1	0	0.0E+00	8.6E-03	9.7E-03	4.4E-02	5.5E-05	5.0E-03	0.0E+00	1.5E-04	0.0E+00	5.0E-03	5.1E-10	0.0E+00	1.3E-08	2.9E-04	0.0E+00	0.0E+00	2.9E+00	0.0E+00	5.5E-03	0.0E+00	4.6E-03
27d	NFF Liquid/NFF	All	100-250	161	FF	1	0	0.0E+00	9.6E-03	1.1E-02	4.9E-02	5.0E-04	5.6E-03	0.0E+00	1.4E-03	0.0E+00	4.5E-02	5.6E-10	0.0E+00	1.5E-08	3.2E-04	0.0E+00	0.0E+00	1.2E+01	0.0E+00	5.0E-02	0.0E+00	4.1E-02
27e	NFF Liquid/NFF	All	100-250	161	Cyclone	1	0	0.0E+00	8.6E-03	9.7E-03	4.4E-02	5.5E-05	5.0E-03	0.0E+00	1.5E-04	0.0E+00	5.0E-03	5.1E-10	0.0E+00	1.3E-08	2.9E-04	0.0E+00	0.0E+00	2.9E+00	0.0E+00	5.5E-03	0.0E+00	4.6E-03
27f	NFF Liquid/NFF	All	100-250	161	Wet Scrubber	3	0	0.0E+00	2.6E-02	2.9E-02	1.3E-01	1.2E-03	1.5E-02	0.0E+00	3.3E-03	0.0E+00	1.1E-01	1.5E-09	0.0E+00	4.0E-08	8.6E-04	0.0E+00	0.0E+00	8.7E+00	0.0E+00	1.2E-01	0.0E+00	9.6E-02
28a	NFF Liquid/NFF	All	>250	562	No Control	13	0	0.0E+00	5.1E-01	5.7E-01	2.6E+00	2.9E-02	3.0E-01	0.0E+00	8.2E-02	0.0E+00	2.7E+00	3.0E-08	0.0E+00	3.0E-07	1.7E-02	0.0E+00	0.0E+00	2.4E+02	0.0E+00	2.9E+00	0.0E+00	9.3E-02
28b	NFF Liquid/NFF	All	>250	562	ESP	5	0	0.0E+00	2.0E-01	2.2E-01	1.0E+00	1.1E-03	1.1E-01	0.0E+00	3.2E-03	0.0E+00	1.0E-01	1.2E-08	0.0E+00	2.2E-07	4.7E-03	0.0E+00	0.0E+00	4.7E+01	0.0E+00	6.3E-01	0.0E+00	5.2E-01
28c	NFF Liquid/NFF	All	>250	562	Wet Scrubber	4	0	0.0E+00	1.4E-01	1.6E-01	7.2E-01	6.3E-03	8.2E-02	0.0E+00	1.8E-02	0.0E+00	5.7E-01	8.3E-09	0.0E+00	2.2E-07	4.7E-03	0.0E+00	0.0E+00	2.4E+02	0.0E+00	1.1E-01	0.0E+00	4.9E+00
29a	Wood	Other	0-10	5	No Control	76	4	7.1E-05	6.3E-02	1.6E+01	1.5E+00	3.1E-02	4.4E+00	4.0E-03	7.9E-03	3.6E-01	3.1E-02	8.0E-06	4.5E-03	1.1E-05	1.4E-02	1.3E+01	3.1E-04	1.4E+01	0.0E+00	1.7E-01	0.0E+00	4.9E+00
29b	Wood	Other	0-10	5	Cyclone	76	4	7.1E-05	6.3E-02	1.6E+01	1.5E+00	2.8E-02	4.4E+00	3.6E-03	7.1E-03	3.6E-01	2.8E-02	8.0E-06	4.5E-03	1.1E-05	1.4E-02	1.3E+01	3.1E-04	1.4E+01	0.0E+00	1.6E-01	0.0E+00	4.4E+00
29c	Wood	Other	0-10	5	FF	76	4	3.2E-06	2.8E-03	7.4E-01	1.5E+02	9.7E-02	2.0E-01	2.0E-05	4.0E-05	1.3E-02	1.6E-04	3.6E-07	2.0E-04	5.1E-07	6.2E-04	5.9E-01	1.4E-05	7.2E-01	0.0E+00	8.7E-04	0.0E+00	2.4E-02
30a	Wood	Other	10-100	30	No Control	73	3	4.5E-04	4.0E-01	1.1E+02	9.5E+00	2.0E-01	2.8E+01	2.6E-02	5.1E-02	2.3E+00	2.0E-01	5.2E-05	2.9E-02	7.3E-05	8.9E-02	8.3E+01	2.0E-03	9.2E+01	0.0E+00	1.1E+00	0.0E+00	3.1E+01
30b	Wood	Other	10-100	30	Cyclone	256	8	1.6E-03	1.4E+00	3.7E+02	3.3E+01	6.2E-01	9.7E-01	8.0E-02	1.6E-01	8.1E+00	6.3E-01	1.8E-04	1.0E-01	2.5E-04	3.1E-01	2.9E+02	6.8E-03	3.2E+02	0.0E+00	3.5E+00	0.0E+00	9.8E+01
30c	Wood	Other	10-100	30	ESP	12	11	1.4E-04	1.2E-01	3.2E+01	2.9E+00	6.0E-03	8.4E+00	7.7E-04	1.5E-03	6.4E-01	6.1E-03	1.6E-05	8.8E-03	2.2E-05	2.7E-02	2.5E+01	6.0E-04	2.8E+01	0.0E+00	3.4E-02	0.0E+00	9.5E-01
30d	Wood	Other	10-100	30	FF	5	9	7.5E-05	6.7E-02	1.7E+01	1.6E+00	3.6E-03	4.6E+00	4.7E-04	9.3E-04	3.0E-01	3.7E-03	8.5E-06	4.8E-03	1.2E-05	1.5E-02	1.4E+01	3.3E-04	1.7E+01	0.0E+00	2.0E-02	0.0E+00	5.8E-01
30e	Wood	Other	10-100	30	Wet Scrubber	26	3	1.6E-04	1.4E-01	3.6E+01	3.3E+00	5.3E-02	9.6E+00	6.8E-03	1.4E-02	2.2E-01	5.4E-02	1.8E-05	9.9E-03	1.4E-05	1.7E-02	1.6E+01	3.8E-04	8.8E+00	0.0E+00	3.0E-01	0.0E+00	8.4E+00
31a	Wood	Other	100-250	179	No Control	28	0	8.7E-05	7.7E-02	1.20E+01	1.8E+00	3.8E-02	5.3E+00	4.9E-03	9.7E-03	4.5E-01	3.8E-02	9.9E-06	5.5E-03	1.4E-05	1.7E-02	1.6E+01	3.8E-04	8.8E+00	0.0E+00	2.1E-01	0.0E+00	6.0E+00
31b	Wood	Other	100-250	179	Cyclone	9	0	3.9E-04	3.5E-02	9.1E+01	8.2E+00	1.5E-01	2.4E+01	2.0E-02	3.9E-02	2.0E+00	1.6E-01	4.4E-05	2.5E-02	6.3E-05	7.6E-02	7.2E+01	1.7E-03	7.9E+01	0.0E+00	8.6E-01	0.0E+00	2.4E+01
31c	Wood	Other	100-250	179	Cyclone/Venturi/Pac	1	0	3.9E-05	3.5E-02	9.1E+01	8.2E+00	1.5E-02	2.4E+00	1.2E-03	2.4E-03	2.2E-03	9.6E-03	4.4E-06	2.5E-03	6.3E-06	7.6E-03	7.2E+00	1.7E-04	8.8E-02	0.0E+00	5.3E-02	0.0E+00	1.5E+00
31d	Wood	Other	100-250	179	ESP	21	0	9.1E-04	8.1E-01	2.1E+02	1.9E+01	4.0E-02	5.6E+01	5.0E-02	1.0E-02	4.2E+00	4.0E-02	1.0E-04	5.8E-02	1.5E-04	7.5E-05	1.7E+02	4.0E-03	1.9E+02	0.0E+00	2.2E-01	0.0E+00	6.3E+00

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
36a	Wood/Other Biomass/NFF Liquid/NFF	All	0-10	7	No Control	3	0	0.0E+00	1.3E-03	8.7E-04	5.2E-04	2.7E-03	7.4E-03	8.5E-04	1.9E-03	1.0E-02	4.8E-02	9.6E-06	0.0E+00	1.4E-07	5.8E-04	1.6E-02	0.0E+00	8.0E-01	0.0E+00	1.1E-02	0.0E+00	3.2E-02
36b	Wood/Other Biomass/NFF Liquid/NFF	All	0-10	7	Cyclone	2	0	0.0E+00	8.7E-04	5.8E-04	3.4E-04	1.6E-03	5.0E-03	5.1E-04	1.2E-03	6.6E-03	2.9E-02	6.5E-08	0.0E+00	9.6E-08	3.8E-04	1.1E-02	0.0E+00	5.3E-01	0.0E+00	6.9E-03	0.0E+00	1.9E-02
36c	Wood/Other Biomass/NFF Liquid/NFF	All	0-10	7	ESP	1	0	0.0E+00	4.3E-04	2.9E-04	1.7E-04	9.1E-05	2.5E-03	2.8E-05	6.4E-05	3.0E-03	1.6E-03	3.3E-08	0.0E+00	4.8E-08	1.9E-04	5.4E-03	0.0E+00	2.7E-01	0.0E+00	3.8E-04	0.0E+00	1.1E-03
36e	Wood/Other Biomass/NFF Liquid/NFF	All	0-10	7	Wet Scrubber	5	0	0.0E+00	2.0E-03	1.3E-03	7.7E-04	3.2E-03	1.1E-02	1.0E-03	2.2E-03	4.2E-03	5.6E-02	1.5E-07	0.0E+00	2.2E-07	8.6E-04	2.5E-02	0.0E+00	3.3E-01	0.0E+00	1.3E-02	0.0E+00	3.7E-02
37a	Wood/Other Biomass/NFF Liquid/NFF	All	10-100	44	No Control	3	0	0.0E+00	7.7E-03	5.2E-03	3.0E-03	1.6E-02	4.4E-02	5.1E-03	1.1E-02	5.9E-02	2.8E-01	5.8E-07	0.0E+00	8.5E-07	3.4E-03	9.7E-02	0.0E+00	4.7E+00	0.0E+00	6.8E-02	0.0E+00	1.9E-01
37b	Wood/Other Biomass/NFF Liquid/NFF	All	10-100	44	Cyclone	12	0	0.0E+00	3.1E-02	2.1E-02	1.2E-02	5.8E-02	1.8E-01	1.8E-02	4.1E-02	2.4E-01	1.0E+00	2.3E-06	0.0E+00	3.4E-06	1.4E-02	3.9E-01	0.0E+00	1.9E+01	0.0E+00	2.4E-01	0.0E+00	6.8E-01
37c	Wood/Other Biomass/NFF Liquid/NFF	All	10-100	44	Cyclone/Venturi/Pac	1	0	0.0E+00	2.3E-03	1.5E-03	9.1E-04	2.7E-03	1.3E-02	8.4E-04	1.9E-03	2.0E-04	4.7E-02	1.7E-07	0.0E+00	2.6E-07	1.0E-03	2.9E-02	0.0E+00	1.6E-02	0.0E+00	1.1E-02	0.0E+00	3.2E-02
37d	Wood/Other Biomass/NFF Liquid/NFF	All	10-100	44	ESP	3	0	0.0E+00	7.7E-03	5.2E-03	3.0E-03	1.6E-03	4.4E-02	5.1E-04	1.1E-03	5.3E-02	2.8E-02	5.8E-07	0.0E+00	8.5E-07	3.4E-03	9.7E-02	0.0E+00	4.7E+00	0.0E+00	6.8E-03	0.0E+00	1.9E-02
37e	Wood/Other Biomass/NFF Liquid/NFF	All	10-100	44	FF	7	0	0.0E+00	1.6E-02	1.1E-02	6.4E-03	3.8E-03	9.2E-02	1.2E-03	2.7E-03	9.6E-02	6.6E-02	1.2E-06	0.0E+00	1.8E-06	7.2E-03	2.0E-01	0.0E+00	1.1E+01	0.0E+00	1.6E-02	0.0E+00	4.4E-02
37i	Wood/Other Biomass/NFF Liquid/NFF	All	10-100	44	Wet Scrubber	6	0	0.0E+00	1.4E-02	9.3E-03	5.5E-03	2.3E-02	7.9E-02	7.1E-03	1.6E-02	2.9E-02	4.0E-01	1.0E-06	0.0E+00	1.5E-06	6.1E-03	1.7E-01	0.0E+00	2.4E+00	0.0E+00	9.5E-02	0.0E+00	2.7E-01
38a	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	Cyclone	1	0	0.0E+00	1.3E-02	8.6E-03	5.1E-03	2.4E-02	7.4E-02	7.6E-03	1.7E-02	9.9E-02	4.3E-01	9.7E-07	0.0E+00	1.4E-06	5.7E-03	1.6E-01	0.0E+00	8.0E+00	0.0E+00	1.0E-01	0.0E+00	2.9E-01
38b	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	Cyclone/Venturi/Pac	1	0	0.0E+00	1.2E-02	7.8E-03	4.6E-03	1.4E-02	6.6E-02	4.2E-03	9.6E-03	9.9E-04	2.4E-01	8.7E-07	0.0E+00	1.3E-06	5.1E-03	1.5E-01	0.0E+00	8.0E-02	0.0E+00	5.7E-02	0.0E+00	1.6E-01
38c	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	ESP	15	0	0.0E+00	1.9E-01	1.3E-01	7.7E-02	4.1E-02	1.1E+00	1.3E-02	2.9E-02	1.3E+00	7.1E-01	1.5E-05	0.0E+00	2.1E-05	8.6E-02	2.4E+00	0.0E+00	1.2E+02	0.0E+00	1.7E-01	0.0E+00	4.8E-01
38d	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	FF	4	0	0.0E+00	4.7E-02	3.1E-02	1.8E-02	1.1E-02	2.7E-01	3.4E-03	7.7E-03	2.8E-01	1.9E-01	3.5E-06	0.0E+00	5.2E-06	2.1E-02	5.8E-01	0.0E+00	3.2E+01	0.0E+00	4.5E-02	0.0E+00	1.3E-01
38e	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	FF/FSI	1	0	0.0E+00	1.2E-02	7.8E-03	4.6E-03	2.7E-03	6.6E-02	8.5E-04	1.9E-03	5.0E-02	4.8E-02	8.7E-07	0.0E+00	1.3E-06	5.1E-03	1.5E-01	0.0E+00	4.0E+00	0.0E+00	1.1E-02	0.0E+00	3.2E-02
38i	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	FF/Wet Scrubber	1	0	0.0E+00	1.2E-02	7.8E-03	4.6E-03	2.7E-03	6.6E-02	8.5E-04	1.9E-03	2.5E-02	4.8E-02	8.7E-07	0.0E+00	1.3E-06	5.1E-03	1.5E-01	0.0E+00	2.0E+00	0.0E+00	1.1E-02	0.0E+00	3.2E-02
38g	Wood/Other Biomass/NFF Liquid/NFF	All	100-250	173	Wet Scrubber	15	0	0.0E+00	1.7E-01	1.2E-01	6.9E-02	2.8E-01	1.0E+00	8.9E-02	2.0E-01	3.7E-01	5.0E+00	1.3E-05	0.0E+00	1.9E-05	7.7E-02	2.2E+00	0.0E+00	3.0E+01	0.0E+00	1.2E+00	0.0E+00	3.3E+00
39a	Wood/Other Biomass/NFF Liquid/NFF	All	>250	513	No Control	1	0	0.0E+00	3.7E-02	2.5E-02	1.5E-02	7.7E-02	2.1E-01	2.4E-02	5.5E-02	2.8E-01	1.4E+00	2.8E-06	0.0E+00	4.1E-06	1.6E-02	4.6E-01	0.0E+00	2.3E+01	0.0E+00	3.2E-01	0.0E+00	9.1E-01
39b	Wood/Other Biomass/NFF Liquid/NFF	All	>250	513	Cyclone	4	0	0.0E+00	1.5E-01	9.9E-02	5.8E-02	2.8E-01	8.4E-01	8.7E-02	2.0E-01	1.1E+00	4.9E+00	1.1E-05	0.0E+00	1.6E-05	6.5E-02	1.9E+00	0.0E+00	9.1E+01	0.0E+00	1.2E+00	0.0E+00	3.3E+00
39c	Wood/Other Biomass/NFF Liquid/NFF	All	>250	513	ESP	26	0	0.0E+00	9.6E-01	6.4E-01	3.8E-01	2.0E-01	5.5E+00	6.3E-02	1.4E-01	6.6E+00	3.5E+00	7.2E-05	0.0E+00	1.1E-04	4.2E-01	1.2E+01	0.0E+00	5.9E+02	0.0E+00	8.4E-01	0.0E+00	2.4E+00
39e	Wood/Other Biomass/NFF Liquid/NFF	All	>250	513	ESP/Wet Scrubber	1	0	0.0E+00	3.3E-02	2.2E-02	1.3E-02	7.7E-03	1.9E-01	2.4E-03	5.5E-03	7.1E-02	1.4E-01	2.5E-06	0.0E+00	3.7E-06	1.5E-02	4.2E-01	0.0E+00	5.7E+00	0.0E+00	3.2E-02	0.0E+00	9.1E-02

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese	
39f	Wood/Other	All	>250	513	FF	1	0	0.0E+00	3.3E-02	2.2E-02	1.3E-02	7.7E-03	1.9E-01	2.4E-03	5.5E-03	2.0E-01	1.4E-01	2.5E-06	0.0E+00	1.2E-04	4.9E-01	4.2E-01	0.0E+00	2.3E-01	0.0E+00	3.2E-02	0.0E+00	9.1E-02	
39g	Biomass/NFF Liquid/NFF	All	>250	513	Wet Scrubber	33	0	0.0E+00	1.1E+00	7.3E-01	4.3E-01	1.8E+00	6.3E+00	5.6E-01	1.3E+00	2.3E+00	3.1E+01	8.2E-05	0.0E+00	1.2E-04	4.9E-01	1.4E+01	0.0E+00	1.9E+02	0.0E+00	7.5E+00	0.0E+00	2.1E+01	
40a	Residual Liquid FF	All	0-10	3	No Control	465	75	0.0E+00	7.9E-02	7.5E-02	3.7E-02	2.0E-02	3.4E-02	4.1E-03	2.3E-02	8.0E+00	1.2E-01	2.2E-07	0.0E+00	8.0E-07	1.2E-03	2.9E-01	0.0E+00	2.6E-01	0.0E+00	6.0E-02	0.0E+00	5.1E+00	
40b	Residual Liquid FF	All	0-10	3	Cyclone	3	0	0.0E+00	4.4E-04	4.2E-04	2.0E-04	1.0E-04	1.9E-04	2.1E-05	1.1E-04	4.4E-02	5.8E-04	1.2E-09	0.0E+00	4.5E-09	6.7E-06	1.6E-03	0.0E+00	1.5E-03	0.0E+00	3.0E-04	0.0E+00	2.6E-02	
40d	Residual Liquid FF	All	0-10	3	FF	9	0	0.0E+00	1.2E-03	1.1E-03	5.5E-04	3.3E-05	5.1E-04	6.9E-06	3.8E-05	9.3E-02	1.9E-04	3.3E-09	0.0E+00	1.2E-08	1.8E-05	4.3E-03	0.0E+00	4.4E-03	0.0E+00	1.0E-04	0.0E+00	8.6E-03	
41a	Residual Liquid FF	All	10-100	37	No Control	1048	508	0.0E+00	2.8E+00	2.7E+00	1.3E+00	7.1E-01	1.2E+00	1.5E-01	8.1E-01	2.8E+02	4.1E+00	7.9E-06	0.0E+00	2.9E-05	4.3E-02	1.0E+01	0.0E+00	9.3E+00	0.0E+00	2.1E+00	1.8E+02		
41b	Residual Liquid FF	All	10-100	37	Cyclone	44	0	0.0E+00	8.0E-02	7.6E-02	3.7E-02	1.8E-02	3.4E-02	3.8E-03	2.1E-02	8.0E+00	1.1E-01	2.2E-07	0.0E+00	8.1E-07	1.2E-03	2.9E-01	0.0E+00	2.6E-01	0.0E+00	5.5E-02	0.0E+00	4.7E+00	
41c	Residual Liquid FF	All	10-100	37	ESP	0	4	0.0E+00	7.3E-03	6.9E-03	3.4E-03	1.8E-04	3.1E-03	3.8E-05	2.1E-04	6.6E-01	1.1E-03	2.0E-08	0.0E+00	7.3E-08	1.1E-04	2.6E-02	0.0E+00	2.4E-02	0.0E+00	5.5E-04	0.0E+00	4.0E-01	
41d	Residual Liquid FF	All	10-100	37	FF	34	0	0.0E+00	5.5E-02	5.3E-02	2.6E-02	1.5E-03	2.4E-02	3.2E-04	1.8E-03	4.4E+00	9.0E-03	1.6E-07	0.0E+00	5.6E-07	8.4E-04	2.0E-01	0.0E+00	2.0E-01	0.0E+00	4.7E-03	0.0E+00	2.6E+00	
41g	Residual Liquid FF	All	10-100	37	Wet Scrubber	28	4	0.0E+00	5.2E-02	5.0E-02	2.4E-02	1.0E-02	2.2E-02	2.1E-03	1.2E-02	1.5E+00	6.0E-02	1.5E-07	0.0E+00	5.3E-07	7.9E-04	1.9E-01	0.0E+00	4.8E-02	0.0E+00	3.1E-02	0.0E+00	1.3E+02	
42a	Residual Liquid FF	All	100-250	172	No Control	179	66	0.0E+00	2.1E+00	2.0E+00	9.6E-01	5.2E-01	8.9E-01	1.1E-01	5.9E-01	2.1E+02	3.0E+00	5.8E-06	0.0E+00	2.1E-05	3.1E-02	7.5E+00	0.0E+00	6.8E+00	0.0E+00	1.6E+00	0.0E+00	1.3E+02	
42b	Residual Liquid FF	All	100-250	172	Cyclone	53	0	0.0E+00	4.5E-01	4.2E-01	2.1E-01	1.0E-01	1.9E-01	2.1E-02	1.2E-01	4.5E+01	5.9E-01	1.3E-06	0.0E+00	4.5E-06	6.7E-03	1.6E+00	0.0E+00	1.5E+00	0.0E+00	3.1E-01	0.0E+00	2.6E+01	
42c	Residual Liquid FF	All	100-250	172	ESP	14	0	0.0E+00	1.2E-01	1.1E-01	5.5E-02	3.0E-03	5.1E-02	6.2E-04	3.4E-03	1.1E+01	1.7E-02	3.3E-07	0.0E+00	1.2E-06	1.8E-03	4.3E-01	0.0E+00	3.9E-01	0.0E+00	9.0E-03	0.0E+00	7.7E-01	
42d	Residual Liquid FF	All	100-250	172	FF	2	0	0.0E+00	1.5E-02	1.4E-02	7.0E-03	4.2E-04	6.5E-03	8.8E-05	4.8E-04	1.2E+00	2.5E-03	4.2E-08	0.0E+00	1.5E-07	2.3E-04	5.5E-02	0.0E+00	5.6E-04	0.0E+00	6.4E-03	0.0E+00	5.5E-01	
42e	Residual Liquid FF	All	100-250	172	Venturi/Packed	2	0	0.0E+00	1.5E-02	1.4E-02	7.0E-03	2.1E-03	6.5E-03	4.4E-04	2.4E-02	3.0E+00	1.2E-02	4.2E-08	0.0E+00	1.5E-07	2.3E-04	5.5E-02	0.0E+00	5.6E-04	0.0E+00	6.4E-03	0.0E+00	5.5E-01	
42f	Residual Liquid FF	All	100-250	172	Wet Scrubber	14	0	0.0E+00	1.1E-01	1.0E-01	4.9E-02	2.1E-02	4.6E-02	4.3E-03	2.4E-02	3.0E+00	1.2E-01	3.0E-07	0.0E+00	1.1E-06	1.6E-03	3.9E-01	0.0E+00	9.8E-02	0.0E+00	2.0E-01	0.0E+00	1.7E-01	
42f	Residual Liquid FF	All	100-250	172	Wet Scrubber	14	0	0.0E+00	1.1E-01	1.0E-01	4.9E-02	2.1E-02	4.6E-02	4.3E-03	2.4E-02	3.0E+00	1.2E-01	3.0E-07	0.0E+00	1.1E-06	1.6E-03	3.9E-01	0.0E+00	9.8E-02	0.0E+00	2.0E-01	0.0E+00	1.7E-01	
43a	Residual Liquid FF	All	>250	547	No Control	125	17	0.0E+00	3.8E+00	3.6E+00	1.8E+00	9.5E-01	1.6E+00	2.0E-01	1.1E+00	3.8E+02	5.6E+00	8.3E-07	0.0E+00	7.5E-02	4.4E-06	1.8E-02	7.9E-01	0.0E+00	2.4E+01	0.0E+00	3.1E-01	0.0E+00	2.6E+00
43b	Residual Liquid FF	All	>250	547	Cyclone	11	0	0.0E+00	1.3E-01	1.3E-01	6.2E-02	3.4E-03	5.8E-02	7.0E-04	3.8E-03	1.2E-01	2.3E-01	3.0E-06	2.0E-01	1.2E-05	2.0E-06	4.7E-02	2.1E+00	0.0E+00	1.8E+01	0.0E+00	1.2E+00	1.7E+00	
43d	Residual Liquid FF	All	>250	547	ESP	5	0	0.0E+00	1.3E-01	1.3E-01	6.2E-02	3.4E-03	5.8E-02	7.0E-04	3.8E-03	1.2E-01	2.3E-01	3.0E-06	2.0E-01	1.2E-05	2.0E-06	4.7E-02	2.1E+00	0.0E+00	1.8E+01	0.0E+00	1.2E+00	1.7E+00	
44a	Bagasse/Other	All	10-100	72	Cyclone	9	0	2.2E-02	1.9E-01	5.8E-01	8.0E-02	7.5E-02	1.6E+01	2.3E-02	5.3E-02	3.0E-01	1.3E+00	3.0E-06	7.5E-02	4.4E-06	1.0E-02	2.1E+00	0.0E+00	1.5E+01	0.0E+00	2.1E+01	0.0E+00	6.1E+00	
44b	Bagasse/Other	All	10-100	72	Wet Scrubber	27	0	5.9E-02	5.0E-01	1.6E+00	2.2E-01	1.7E-01	4.2E+01	5.5E-02	1.2E-01	2.3E-01	3.1E+00	8.0E-06	2.0E-01	1.2E-05	4.5E-02	3.1E-00	0.0E+00	9.5E+01	0.0E+00	1.2E+00	0.0E+00	1.3E+01	
45a	Bagasse/Other	All	100-250	158	No Control	2	0	1.3E-02	1.1E-01	3.5E-01	4.8E-02	4.9E-02	9.3E+00	1.5E-02	3.5E-02	1.8E-01	8.7E-01	1.8E-06	2.0E-01	1.7E-05	2.5E-05	9.9E-02	4.5E+00	0.0E+00	3.8E+01	0.0E+00	1.5E+00	1.0E+01	
45b	Bagasse/Other	All	100-250	158	Cyclone	13	0	8.5E-02	7.2E-01	2.3E+00	3.1E-01	2.9E-01	6.1E+01	9.1E-02	2.0E-01	1.2E+00	5.1E+00	1.2E-05	4.2E-01	1.7E-05	2.5E-05	9.9E-02	4.5E+00	0.0E+00	3.8E+01	0.0E+00	1.5E+00	1.0E+01	
45c	Bagasse/Other	All	100-250	158	Wet Scrubber	21	0	1.2E-01	1.1E+00	3.3E+00	4.5E-01	3.6E-01	8.8E+01	1.1E-01	2.6E-01	4.7E-01	6.4E+00	1.7E-05	4.2E-01	1.7E-05	2.5E-05	9.9E-02	4.5E+00	0.0E+00	3.8E+01	0.0E+00	1.5E+00	1.0E+01	
46a	Bagasse/Other	All	>250	419	ESP	2	0	3.4E-02	2.9E-01	9.0E-01	1.2E-01	1.3E-02	2.4E+01	4.0E-03	9.1E-03	4.2E-01	2.2E-01	4.8E-06	1.2E-01	8.8E-06	2.7E-02	1.2E+00	0.0E+00	1.4E+02	0.0E+00	2.1E-01	0.0E+00	1.8E+00	
46b	Bagasse/Other	All	>250	419	ESP/Activated Carb	8	0	1.2E-01	1.0E+00	3.3E+00	4.5E-01	5.1E-02	8.7E+01	1.6E-02	3.6E-02	1.7E+00	9.0E-01	1.0E-04	2.6E-00	1.3E-04	6.1E-01	2.8E+01	0.0E+00	2.4E+02	0.0E+00	9.4E+00	0.0E+00	7.9E+01	
46c	Bagasse/Other	All	>250	419	Wet Scrubber	50	0	7.6E-01	6.5E+00	2.0E+01	2.8E+00	2.2E+00	5.4E+02	7.0E-01	1.6E-02	2.9E+00	3.9E+01	1.0E-04	2.0E-07	7.4E-07	8.8E-05	1.0E-03	0.0E+00	2.9E+00	2.1E-01	1.6E-02	0.0E+00	6.8E-02	
47a	Coal	Other	0-10	4	No Control	36	0	7.4E-05	2.9E-03	6.7E-03	1.1E-03	4.3E-02	2.6E-03	3.6E-03	6.2E-03	4.2E+00	4.7E-02	7.4E-07	7.4E-04	4.8E-07	3.3E-04	3.8E-03	0.0E+00	1.1E+01	8.0E-01	6.1E-02	0.0E+00	2.6E-01	
48a	Coal	Other	10-100	54	No Control	10	0	2.8E-04	2.9E-03	6.7E-03	1.1E-03	4.3E-02	2.6E-03	3.6E-03	6.2E-03	4.2E+00	4.7E-02	7.4E-07	7.4E-04	4.8E-07	3.3E-04	3.8E-03	0.0E+00	1.1E+01	8.0E-01	6.1E-02	0.0E+00	2.6E-01	
48b	Coal	Other	10-100	54	Cyclone	54	0	1.5E-03	1.5E-02	3.6E-02	5.9E-03	2.1E-01	1.4E-02	1.8E-02	3.0E-02	2.3E+01	2.3E-01	4.0E-06	4.0E-03	2.2E-07	2.2E-04	9.9E-05	1.0E-03	0.0E+00	5.9E+01	4.3E+00	0.0E+00	1.2E+00	
48c	Coal	Other	10-100	54	ESP	3	0	8.4E-05	8.6E-04	2.0E-03	3.3E-04	1.3E-03	7.9E-04	1.1E-04	1.9E-04	8.9E-01	1.4E-03	2.0E-07	2.2E-04	1.4E-07	9.9E-05	1.0E-03	0.0E+00	3.3E+00	2.2E-01	1.8E-03	0.0E+00	7.7E-03	
48d	Coal	Other	10-100	54	FF	3	0	7.5E-05	7.7E-04	3.0E-04	1.3E-04	7.1E-04	1.1E-04	1.9E-04	8.9E-01	1.4E-03	2.0E-07	2.2E-04	1.4E-07	9.9E-05	1.0E-03	0.0E+00	3.3E+00	2.2E-01	1.8E-03	0.0E+00	7.7E-03		
49b	Coal	Other	100-250	166	Cyclone	26	0	2.2E-02	2.3E-02	5.4E-02	8.8E-03	3.1E-01	2.1E-02	2.6E-02	4.5E-02	3.4E+01	3.4E-01	5.9E-06	6.8E-04	3.7E-06	2.6E-03	3.0E-02	0.0E+00	8.8E+01	6.4E+00	4.4E-01	0.0E+00	1.8E+00	
49c	Coal	Other	100-250	166	ESP	3	0	2.6E-04	2.6E-03	6.2E-03	1.0E-03	4.0E-03	2.4E-03	3.3E-04	5.7E-04	3.5E+00	4.4E-03	6.8E-07	6.8E-04	4.5E-07	3.0E-04	3.5E-03	0.0E+00	1.0E+01	6.6E-01	5.6E-03	0.0E+00	2.4E-02	
50c	Coal	Other	>250	565	ESP	5	0	1.5E-03	1.5E-02	3.5E-02	5.7E-03	2.3E-02	1.4E-02	1.9E-03	3.3E-03	2.0E+01	2.5E-02	3.9E-06	3.9E-03	2.4E-06	1.7E-03	2.0E-02	0.0E+00	5.8E+01	3.8E+00	3.2E-02	0.0E+00	1.3E-01	
50f	Coal	Other	>250	565	FF	2	0	5.3E-04	5.4E-03	1.3E-02	2.1E-03	9.0E-03	5.0E-03	7.6E-04	1.3E-03	6.2E-03	8.1E+00	4.5E-02	7.0E-07	7.0E-04	4.8E-07	3.1E-04	3.6E-03	0.0E+00	1.0E+01	7.6E-01	5.8E-02	0.0E+00	2.4E-01
52a	Coal	Wet-fired/P	10-100	57	No Control	9	0	2.6E-04	2.7E-03	6.4E-03	1.0E-03	4.1E-02	2.5E-03	3.4E-03	5.9E-03	6.2E-03	8.1E+00	4.5E-02	7.0E-07	7.0E-04	4.8E-07	3.1E-04	3.6E-03	0.0E+00	1.0E+01	7.6E-01	5.8E-02	0.0E+00	2.4E-01
52b	Coal	Wet-fired/P	10-10																										

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
54c	Coal	Wall-fired/P	>250	600	ESP	15	0	4.6E+03	4.6E+02	1.1E+01	1.8E+02	7.2E+02	4.4E+02	6.0E+03	1.0E+02	6.4E+01	7.9E+02	1.2E+05	1.2E+02	7.7E+06	5.5E+03	6.3E+02	1.0E+00	1.8E+02	1.2E+01	1.0E+01	0.0E+00	4.3E+01
55b	Coal/Wood/NFF Liquid/NFF Solid	All	0-10	6	Cyclone	1	0	0.0E+00	8.2E+05	3.8E+03	1.9E+03	1.1E+04	7.6E+03	4.0E+06	1.5E+05	9.0E+03	2.5E+04	2.1E+09	1.1E+04	2.0E+09	0.0E+00	8.3E+03	0.0E+00	2.6E+02	2.7E+02	2.9E+04	0.0E+00	1.7E+03
56b	Coal/Wood/NFF Liquid/NFF Solid	All	10-100	35	Cyclone	2	0	0.0E+00	9.6E+04	4.4E+02	2.3E+02	1.3E+03	8.9E+02	4.6E+05	1.7E+04	1.0E+01	2.9E+03	2.4E+08	1.3E+03	2.4E+08	0.0E+00	9.7E+02	0.0E+00	3.0E+01	3.1E+01	3.4E+03	0.0E+00	2.0E+02
57d	Coal/Wood/NFF Liquid/NFF Solid	All	100-250	173	FF	1	0	0.0E+00	2.1E+03	9.8E+02	5.0E+02	3.5E+04	2.0E+01	1.3E+05	4.7E+05	1.8E+01	8.0E+04	5.4E+08	2.8E+03	5.2E+08	0.0E+00	2.2E+01	0.0E+00	7.5E+01	5.4E+01	9.4E+04	0.0E+00	5.6E+03
58a	Gas	Other	0-10	3	No Control	1588	350	0.0E+00	2.8E+01	4.1E+01	2.1E+02	3.7E+03	3.3E+03	0.0E+00	2.7E+03	0.0E+00	3.1E+03	1.3E+08	0.0E+00	1.4E+07	1.5E+03	7.3E+01	0.0E+00	2.7E+02	0.0E+00	5.4E+03	2.0E+03	3.9E+02
58d	Gas	Other	0-10	3	FF	13	22	0.0E+00	4.5E+03	6.7E+03	3.5E+04	6.6E+06	5.4E+05	0.0E+00	4.9E+06	0.0E+00	5.6E+06	2.2E+10	0.0E+00	2.3E+09	2.5E+05	1.2E+02	0.0E+00	5.0E+04	0.0E+00	9.7E+06	3.3E+05	7.1E+05
58h	Gas	Other	0-10	3	Wet Scrubber	10	6	0.0E+00	2.1E+03	3.1E+03	1.6E+04	2.1E+05	2.5E+05	0.0E+00	1.6E+05	0.0E+00	1.8E+05	9.9E+11	0.0E+00	1.1E+09	1.1E+05	5.4E+03	0.0E+00	5.7E+05	0.0E+00	3.1E+05	1.5E+05	2.3E+04
59a	Gas	Other	10-100	33	No Control	561	220	0.0E+00	1.2E+00	1.8E+00	9.5E+02	1.6E+02	1.5E+02	0.0E+00	1.2E+02	0.0E+00	1.4E+02	5.9E+08	0.0E+00	6.3E+07	6.7E+03	3.2E+00	0.0E+00	1.2E+01	0.0E+00	2.4E+02	9.0E+03	1.7E+01
59b	Gas	Other	10-100	33	Cyclone	16	0	0.0E+00	2.5E+02	3.7E+02	1.9E+03	3.0E+04	3.0E+04	0.0E+00	2.2E+04	0.0E+00	2.5E+04	1.2E+09	0.0E+00	1.3E+08	1.4E+04	6.6E+02	0.0E+00	2.5E+03	0.0E+00	4.4E+04	1.8E+04	3.2E+03
59d	Gas	Other	10-100	33	FF	13	0	0.0E+00	1.8E+02	2.7E+02	1.4E+03	2.7E+05	2.2E+04	0.0E+00	2.0E+05	0.0E+00	2.3E+05	8.8E+10	0.0E+00	9.5E+09	1.0E+04	4.9E+02	0.0E+00	2.0E+03	4.0E+05	1.3E+04	2.9E+04	
59e	Gas	Other	10-100	33	FF/Wet Scrubber	7	0	0.0E+00	1.0E+02	1.5E+02	7.7E+04	1.5E+05	1.2E+04	0.0E+00	1.1E+05	0.0E+00	1.2E+05	4.7E+10	0.0E+00	5.1E+09	5.4E+05	2.6E+02	0.0E+00	2.7E+04	0.0E+00	2.1E+05	7.2E+05	1.6E+04
59f	Gas	Other	10-100	33	Wet Scrubber	2	0	0.0E+00	2.8E+03	4.2E+03	2.2E+04	2.9E+05	3.4E+05	0.0E+00	2.1E+05	0.0E+00	2.5E+05	1.4E+10	0.0E+00	1.5E+09	1.6E+05	7.5E+03	0.0E+00	7.8E+05	0.0E+00	4.3E+05	2.1E+05	3.1E+04
60a	Gas	Other	100-250	164	No Control	74	12	0.0E+00	6.8E+01	1.0E+00	5.2E+02	8.9E+03	8.1E+03	0.0E+00	6.5E+03	0.0E+00	7.5E+03	3.2E+08	0.0E+00	3.5E+07	3.7E+03	1.8E+00	0.0E+00	6.7E+02	0.0E+00	1.3E+02	4.9E+03	9.6E+02
60b	Gas	Other	100-250	164	Cyclone	2	0	0.0E+00	1.6E+02	2.3E+02	1.2E+03	1.9E+04	1.9E+04	0.0E+00	1.4E+04	0.0E+00	1.6E+04	7.5E+10	0.0E+00	8.0E+09	8.6E+05	4.1E+02	0.0E+00	1.5E+03	0.0E+00	2.7E+04	1.1E+04	2.0E+03
60e	Gas	Other	100-250	164	FF	2	0	0.0E+00	1.4E+02	2.1E+02	1.1E+03	2.1E+05	1.7E+04	0.0E+00	1.5E+05	0.0E+00	1.7E+05	6.7E+10	0.0E+00	7.2E+09	7.7E+05	3.7E+02	0.0E+00	1.5E+03	0.0E+00	3.0E+05	1.0E+04	2.2E+04
61a	Gas	Other	>250	520	No Control	26	14	0.0E+00	1.0E+00	1.5E+00	7.7E+02	1.3E+02	1.2E+02	0.0E+00	9.6E+03	0.0E+00	1.1E+02	4.7E+08	0.0E+00	5.1E+07	5.4E+03	2.6E+00	0.0E+00	9.8E+02	0.0E+00	1.9E+02	7.2E+03	1.4E+01
62a	Gas/Wood/Other Biomass/Liquid FF	All	0-10	6	No Control	1	0	3.0E+05	2.6E+04	8.1E+04	1.1E+04	5.1E+06	2.2E+02	2.5E+07	1.2E+05	4.0E+04	6.0E+05	0.0E+00	1.0E+04	0.0E+00	8.9E+06	1.1E+03	0.0E+00	1.0E+02	0.0E+00	9.0E+05	0.0E+00	4.0E+03
62b	Gas/Wood/Other Biomass/Liquid FF	All	0-10	6	Cyclone	1	0	3.0E+05	2.6E+04	8.1E+04	1.1E+04	4.6E+06	2.2E+02	2.2E+07	1.1E+05	4.0E+04	5.4E+05	0.0E+00	1.0E+04	0.0E+00	8.9E+06	1.1E+03	0.0E+00	1.0E+02	0.0E+00	8.1E+05	0.0E+00	3.6E+03
63a	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	No Control	2	0	4.5E+04	3.9E+03	1.2E+02	1.7E+03	7.7E+05	3.2E+01	3.7E+06	1.8E+04	6.0E+03	9.0E+04	0.0E+00	1.6E+03	0.0E+00	1.3E+04	1.6E+02	0.0E+00	1.5E+01	0.0E+00	1.3E+03	0.0E+00	6.1E+02
63b	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	Cyclone	1	0	2.3E+04	1.9E+03	6.1E+03	8.3E+04	3.5E+05	1.6E+01	1.7E+06	8.0E+05	3.0E+03	4.0E+04	0.0E+00	7.8E+04	0.0E+00	6.7E+05	8.2E+03	0.0E+00	7.5E+02	0.0E+00	6.0E+04	0.0E+00	2.7E+02
64d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	ESP	1	0	8.9E+04	7.6E+03	2.4E+02	3.3E+03	1.5E+05	6.4E+01	7.3E+07	3.5E+05	1.1E+02	1.8E+04	0.0E+00	3.1E+03	0.0E+00	2.7E+04	3.3E+02	0.0E+00	3.0E+01	0.0E+00	2.7E+04	0.0E+00	1.2E+02
64e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	ESP/Wet Scrubber	1	0	8.0E+04	6.9E+03	2.2E+02	3.0E+03	1.5E+05	5.8E+01	7.3E+07	3.5E+05	3.0E+03	1.8E+04	0.0E+00	2.8E+03	0.0E+00	2.4E+04	2.9E+02	0.0E+00	7.4E+02	0.0E+00	2.7E+04	0.0E+00	1.2E+02
65e	Gas/Wood/Other Biomass/Liquid FF	All	>250	394	Wet Scrubber	1	0	1.8E+03	1.5E+02	4.8E+02	6.6E+03	2.4E+04	1.3E+00	1.1E+05	5.4E+04	6.5E+03	2.7E+03	0.0E+00	6.2E+03	0.0E+00	5.3E+04	6.5E+02	0.0E+00	1.6E+01	0.0E+00	4.1E+03	0.0E+00	1.9E+01
66a	Distillate Liquid FF	All	0-10	3	No Control	407	21	0.0E+00	2.5E+02	9.9E+02	4.9E+03	2.9E+04	7.6E+03	1.1E+04	1.1E+04	1.1E+00	3.6E+04	2.9E+08	0.0E+00	1.1E+07	1.6E+04	7.4E+02	0.0E+00	3.5E+02	0.0E+00	1.1E+03	0.0E+00	2.1E+03
67a	Distillate Liquid FF	All	10-100	29	No Control	207	8	0.0E+00	1.2E+01	4.8E+02	2.4E+02	1.4E+03	3.7E+02	5.3E+04	5.3E+04	5.1E+00	1.7E+03	1.4E+07	0.0E+00	5.2E+07	7.7E+04	3.6E+01	0.0E+00	1.7E+01	0.0E+00	5.3E+03	0.0E+00	1.0E+02
67d	Distillate Liquid FF	All	10-100	29	FF	3	0	0.0E+00	1.5E+03	6.1E+04	3.0E+04	2.0E+06	4.6E+04	7.3E+07	7.3E+07	5.0E+02	2.4E+06	1.8E+09	0.0E+00	6.5E+09	9.6E+06	4.5E+03	0.0E+00	2.4E+03	0.0E+00	7.3E+06	0.0E+00	1.4E+05
68a	Distillate Liquid FF	All	100-250	157	No Control	42	1	0.0E+00	1.3E+01	5.2E+02	2.6E+02	1.5E+03	4.0E+02	5.7E+04	5.7E+04	5.6E+00	1.9E+03	1.5E+07	0.0E+00	5.6E+07	8.3E+04	3.9E+01	0.0E+00	1.8E+01	0.0E+00	5.7E+03	0.0E+00	1.1E+02
69a	Distillate Liquid FF	All	>250	355	No Control	10	1	0.0E+00	7.7E+02	3.0E+02	1.5E+02	9.0E+04	2.3E+02	3.3E+04	3.3E+04	3.2E+00	1.1E+03	8.9E+08	0.0E+00	3.2E+07	4.8E+04	2.2E+01	0.0E+00	1.1E+01	0.0E+00	3.3E+03	0.0E+00	6.2E+03
69d	Distillate Liquid FF	All	>250	355	ESP	3	0	0.0E+00	2.1E+02	8.2E+03	4.0E+03	2.4E+05	6.3E+03	9.0E+06	9.0E+06	7.9E+01	3.0E+05	2.4E+08	0.0E+00	8.8E+08	1.3E+04	6.1E+02	0.0E+00	2.9E+02	0.0E+00	9.0E+05	0.0E+00	1.7E+04
70b	NFF Liquid/NFF Solid/Gas	All	10-100	58	Cyclone	3	1	0.0E+00	2.2E+03	2.4E+03	1.1E+02	1.1E+04	1.3E+03	0.0E+00	3.1E+04	0.0E+00	1.0E+02	1.3E+10	0.0E+00	3.3E+09	7.1E+05	0.0E+00	0.0E+00	2.6E+00	0.0E+00	1.1E+02	0.0E+00	9.3E+03
72b	NFF Liquid/NFF Solid/Gas	All	>250	562	ESP	1	0	0.0E+00	5.2E+03	5.9E+03	2.7E+02	3.0E+05	3.0E+03	0.0E+00	8.5E+05	0.0E+00	2.7E+03	3.1E+10	0.0E+00	8.1E+09	1.7E+04	0.0E+00	0.0E+00	6.3E+00	0.0E+00	3.0E+03	0.0E+00	2.5E+03

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	14-Dichlorobenzene	16-PAH	Acetaldehyde	Acrolein	Arsenic	Benzene	Beryllium	Cadmium	Chlorine	Chromium	Dibenzofuran	Dibutylphthalate	Dioxin	Ethylbenzene	Formaldehyde	Hexachlorobenzene	Hydrochloric Acid	Hydrofluoric Acid	Lead	m-Xylene	Manganese
73a	Wood	Other	0-10	5	No Control	6	0	9.3E-07	8.3E-04	2.2E-01	2.0E-02	4.1E-04	5.7E-02	5.2E-05	1.0E-04	4.8E-03	4.1E-04	1.1E-07	6.0E-05	1.5E-07	1.8E-04	1.7E-01	4.0E-06	1.9E-01	0.0E+00	2.3E-03	0.0E+00	6.4E-02
73b	Wood	Other	0-10	5	Cyclone	8	0	1.2E-06	1.1E-03	2.9E-01	2.6E-02	4.9E-04	7.6E-02	6.3E-05	1.3E-04	6.4E-03	4.9E-04	1.4E-07	7.9E-05	2.0E-07	2.4E-04	2.3E-01	5.4E-06	2.5E-01	0.0E+00	2.7E-03	0.0E+00	7.7E-02
74a	Wood	Other	10-100	30	No Control	4	0	3.7E-06	3.3E-03	8.7E-01	7.8E-02	1.6E-03	2.3E-01	2.1E-04	4.2E-04	1.9E-02	1.6E-03	4.2E-07	2.4E-04	6.0E-07	7.3E-04	6.9E-01	1.6E-05	7.6E-01	0.0E+00	9.1E-03	0.0E+00	2.6E-01
74b	Wood	Other	10-100	30	Cyclone	2	0	1.9E-06	1.7E-03	4.3E-01	3.9E-02	7.3E-04	1.1E-01	9.4E-05	1.9E-04	9.6E-03	7.4E-04	2.1E-07	1.2E-04	3.0E-07	3.6E-04	3.4E-01	8.1E-06	3.8E-01	0.0E+00	4.1E-03	0.0E+00	1.2E-01
74e	Wood	Other	10-100	30	Wet Scrubber	2	0	1.7E-06	1.5E-03	3.9E-01	3.5E-02	5.7E-04	1.0E-01	7.3E-05	1.5E-04	2.4E-03	5.8E-04	1.9E-07	1.1E-04	2.7E-07	3.3E-04	3.1E-01	7.3E-06	9.5E-02	0.0E+00	3.2E-03	0.0E+00	9.0E-02
75e	Wood	Other	100-250	179	Wet Scrubber	1	0	5.0E-06	4.5E-03	1.2E+00	1.0E-01	1.7E-03	3.1E-01	2.2E-04	4.4E-04	7.2E-03	1.7E-03	5.7E-07	3.2E-04	8.0E-07	9.8E-04	9.2E-01	2.2E-05	2.8E-01	0.0E+00	9.5E-03	0.0E+00	2.7E-01
76b	Wood	Wall-fired/P	0-10	7	Cyclone	3	0	6.5E-07	5.8E-04	1.5E-01	1.4E-02	2.6E-04	4.0E-02	3.3E-05	6.6E-05	3.4E-03	2.6E-04	7.4E-08	4.2E-05	1.0E-07	1.3E-04	1.2E-01	2.8E-06	1.3E-01	0.0E+00	1.4E-03	0.0E+00	4.1E-02
77b	Wood	Wall-fired/P	10-100	26	Cyclone	2	0	1.6E-06	1.4E-03	3.8E-01	3.4E-02	6.3E-04	9.9E-02	8.2E-05	1.6E-04	8.3E-03	6.4E-04	1.8E-07	1.0E-04	2.6E-07	3.2E-04	3.0E-01	7.0E-06	3.3E-01	0.0E+00	3.6E-03	0.0E+00	1.0E-01
78a	Wood/Other	Biomass/NFF Liquid/NFF	0-10	7	No Control	2	0	0.0E+00	1.3E-04	8.5E-05	5.0E-05	2.7E-04	7.3E-04	8.4E-05	1.9E-04	9.8E-04	4.7E-03	9.6E-09	0.0E+00	1.4E-08	5.6E-05	1.6E-03	0.0E+00	7.9E-02	0.0E+00	1.1E-03	0.0E+00	3.1E-03
79b	Wood/Other	Biomass/NFF Liquid/NFF	10-100	44	Cyclone	3	0	0.0E+00	1.2E-03	8.0E-04	4.8E-04	2.3E-03	6.9E-03	7.1E-04	1.6E-03	9.2E-03	4.0E-02	9.0E-08	0.0E+00	1.3E-07	5.3E-04	1.5E-02	0.0E+00	7.4E-01	0.0E+00	9.5E-03	0.0E+00	2.7E-02
79d	Wood/Other	Biomass/NFF Liquid/NFF	10-100	44	ESP	1	0	0.0E+00	4.0E-04	2.7E-04	1.6E-04	8.4E-05	2.3E-03	2.6E-05	5.9E-05	2.8E-03	1.5E-03	3.0E-08	0.0E+00	4.4E-08	1.8E-04	5.0E-03	0.0E+00	2.5E-01	0.0E+00	3.5E-04	0.0E+00	9.9E-04
80a	Residual Liquid FF	All	0-10	3	No Control	159	8	0.0E+00	4.1E-03	3.9E-03	1.9E-03	1.0E-03	1.8E-03	2.1E-04	1.2E-03	4.1E-01	6.0E-03	1.1E-08	0.0E+00	4.1E-08	6.2E-05	1.5E-02	0.0E+00	1.4E-02	0.0E+00	3.1E-03	0.0E+00	2.7E-01
81a	Residual Liquid FF	All	10-100	37	No Control	295	23	0.0E+00	9.6E-02	9.1E-02	4.4E-02	2.4E-02	4.1E-02	5.0E-03	2.8E-02	9.7E+00	1.4E-01	2.7E-07	0.0E+00	9.7E-07	1.4E-03	3.5E-01	0.0E+00	3.2E-01	0.0E+00	7.3E-02	0.0E+00	6.2E+00
81g	Residual Liquid FF	All	10-100	37	Wet Scrubber	9	0	0.0E+00	2.4E-03	2.3E-03	1.1E-03	4.8E-04	1.1E-03	9.9E-05	5.5E-04	6.9E-02	2.8E-03	6.9E-09	0.0E+00	2.5E-08	3.7E-05	8.9E-03	0.0E+00	2.3E-03	0.0E+00	1.4E-03	0.0E+00	1.2E-01
82a	Residual Liquid FF	All	100-250	172	No Control	63	0	0.0E+00	8.9E-02	8.4E-02	4.1E-02	2.2E-02	3.8E-02	4.6E-03	2.5E-02	8.9E+00	1.3E-01	2.5E-07	0.0E+00	9.0E-07	1.3E-03	3.2E-01	0.0E+00	2.9E-01	0.0E+00	6.7E-02	0.0E+00	5.7E+00
83a	Residual Liquid FF	All	>250	547	No Control	7	0	0.0E+00	3.1E-02	3.0E-02	1.4E-02	7.8E-03	1.3E-02	1.6E-03	9.0E-03	3.2E+00	4.6E-02	8.8E-08	0.0E+00	3.2E-07	4.7E-04	1.1E-01	0.0E+00	1.0E-01	0.0E+00	2.4E-02	0.0E+00	2.0E+00
Total						42,852	15,248	3.67	445	2,820	355	85.9	2,661	8.56	21.8	19,543	214	0.00624	19.1	0.00468	8.13	3,238	0.0357	58,289	4,698	181	2.71	1,698

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
1a	Coal	Other	0-10	4	No Control	48	0	2.4E-03	2.5E-04	6.5E-02	1.8E-02	1.1E-01	2.0E-04	1.1E+00	8.2E-03	7.3E-03	986	14	1.225
1b	Coal	Other	0-10	4	Cyclone	32	0	1.6E-03	1.7E-04	4.3E-02	1.2E-02	6.7E-02	1.3E-04	7.3E-01	5.5E-03	4.9E-03	164	9	816
1c	Coal	Other	0-10	4	FF	3	0	1.5E-04	1.4E-05	3.7E-03	1.0E-03	6.9E-04	1.1E-05	4.8E-02	4.6E-04	4.1E-04	1	1	77
2a	Coal	Other	10-100	54	No Control	154	0	1.0E-01	1.1E-02	2.8E+00	7.8E-01	4.8E+00	8.7E-03	4.7E+01	3.6E-01	3.2E-01	42,714	586	53,041
2b	Coal	Other	10-100	54	Cyclone	436	0	2.9E-01	3.0E-02	8.0E+00	2.2E+00	1.2E+01	2.9E-02	1.3E+02	1.0E+00	9.0E-01	30,232	1,660	150,168
2c	Coal	Other	10-100	54	ESP	123	0	8.2E-02	8.6E-03	2.2E+00	6.2E-01	3.8E-01	7.0E-03	3.4E+01	2.8E-01	2.5E-01	682	468	42,364
2d	Coal	Other	10-100	54	FF	181	0	1.2E-01	1.1E-02	3.0E+00	8.2E-01	5.6E-01	9.3E-03	3.9E+01	3.8E-01	3.4E-01	502	620	62,341
2e	Coal	Other	10-100	54	FF/DSI	5	0	3.4E-03	3.1E-04	8.2E-02	2.3E-02	1.6E-02	2.6E-04	1.5E-01	1.0E-02	9.3E-03	14	17	1,722
2f	Coal	Other	10-100	54	FF/SD	5	0	3.4E-03	2.4E-04	6.4E-02	1.8E-02	1.6E-03	2.0E-04	1.5E-01	8.1E-03	7.2E-03	14	13	1,722
2g	Coal	Other	10-100	54	Wet Scrubber	15	0	1.0E-02	9.4E-04	2.5E-01	6.8E-02	3.3E-01	7.7E-04	1.2E+00	3.1E-02	2.8E-02	2,080	51	5,166
3a	Coal	Other	100-250	166	No Control	46	0	9.5E-02	9.9E-03	2.6E+00	7.1E-01	4.4E+00	8.0E-01	4.3E+01	3.3E-01	2.9E-01	39,221	538	48,704
3b	Coal	Other	100-250	166	Cyclone	166	0	3.4E-01	3.6E-02	9.3E+00	1.7E+00	1.4E+01	2.9E-02	1.6E+02	1.2E+00	1.1E+00	35,384	1,943	175,758
3c	Coal	Other	100-250	166	ESP	112	0	2.3E-01	2.4E-02	6.3E+00	1.7E+00	1.1E+00	2.0E-02	9.5E+01	8.0E-01	7.1E-01	1,910	21	2,118
3d	Coal	Other	100-250	166	ESP/Wet Scrubber	2	0	4.1E-03	3.9E-04	1.0E-01	2.8E-02	1.9E-02	3.1E-04	4.7E-01	1.3E-02	1.1E-02	34	1,311	118,584
3e	Coal	Other	100-250	166	FF	160	0	3.3E-01	3.1E-02	8.1E+00	2.2E+00	1.5E+00	2.5E-02	1.1E+02	1.0E+00	9.1E-01	1,364	1,685	169,405
3f	Coal	Other	100-250	166	FF/DSI	4	0	8.2E-03	7.7E-04	2.0E-01	5.6E-02	3.8E-02	6.3E-04	9.4E-01	2.6E-02	2.3E-02	34	42	4,235
3g	Coal	Other	100-250	166	FF/Wet Scrubber	4	0	8.2E-03	7.7E-04	2.0E-01	5.6E-02	3.8E-02	6.3E-04	9.4E-01	2.6E-02	2.3E-02	34	42	4,235
3h	Coal	Other	100-250	166	Wet Scrubber	15	0	3.1E-02	2.9E-03	7.6E-01	2.1E-01	1.0E+00	2.4E-03	3.5E+00	9.6E-02	8.6E-02	6,395	158	15,882
4a	Coal	Other	>250	565	No Control	24	0	1.7E-01	1.7E-02	4.6E+00	1.3E+00	7.8E+00	1.4E-02	7.7E+01	5.8E-01	5.2E-01	69,649	956	86,488
4b	Coal	Other	>250	565	Cyclone	14	0	9.8E-01	1.0E-02	2.7E+00	7.4E-01	4.1E+00	8.3E-01	4.5E+01	3.4E-01	3.0E-01	10,157	558	50,452
4c	Coal	Other	>250	565	ESP	40	0	2.8E-01	2.9E-02	7.6E+00	2.1E+00	1.3E+00	2.4E-02	1.2E+02	9.7E-01	8.6E-01	2,322	1,593	144,147
4d	Coal	Other	>250	565	ESP/DSI	2	0	1.4E-02	1.5E-03	3.8E-01	1.1E-01	6.5E-02	1.2E-03	3.2E+00	4.8E-02	4.3E-02	116	80	7,207
4e	Coal	Other	>250	565	ESP/Wet Scrubber	4	0	2.8E-02	2.6E-03	6.9E-01	1.9E-01	1.3E-01	2.1E-03	3.2E+00	8.7E-02	7.8E-02	232	143	14,415
4f	Coal	Other	>250	565	FF	56	0	3.9E-01	3.7E-02	9.6E+00	2.7E+00	1.8E+00	3.0E-02	1.3E+02	1.2E+00	1.1E+00	1,625	2,007	201,806
4g	Coal	Other	>250	565	FF/DSI	40	0	2.8E-01	2.6E-02	6.9E+00	1.9E+00	1.3E-01	2.1E-02	6.4E+01	8.7E-01	7.8E-01	1,161	1,434	144,147
4h	Coal	Other	>250	565	FF/FSI	10	0	7.0E-02	6.6E-03	1.7E+00	4.8E-01	3.3E-01	5.3E-03	1.6E+01	2.2E-01	1.9E-01	290	358	36,037
4i	Coal	Other	>250	565	FF/SD	6	0	4.2E-02	3.1E-03	8.0E-01	2.2E-01	2.0E-02	2.5E-03	1.9E+00	1.0E-01	9.1E-02	174	167	21,622
4j	Coal	Other	>250	565	Wet Scrubber	8	0	5.6E-02	5.2E-03	1.4E+00	3.8E-01	1.8E+00	4.3E-03	6.4E+00	1.7E-01	1.6E-01	11,608	287	28,829
5a	Coal	Wet-fired/P	0-10	2	No Control	10	0	2.5E-04	2.6E-05	6.8E-03	1.9E-03	1.2E-02	2.1E-05	1.1E-01	8.6E-04	7.7E-04	103	1	28
5b	Coal	Wet-fired/P	0-10	2	Wet Scrubber	2	0	5.0E-05	5.2E-06	1.4E-03	3.7E-04	2.1E-03	4.2E-06	2.3E-02	1.7E-04	1.5E-04	5	0	26
6a	Coal	Wet-fired/P	10-100	57	No Control	14	0	9.9E-03	1.0E-03	2.7E-01	7.5E-02	4.6E-01	8.4E-04	4.5E+00	3.4E-02	3.1E-02	4,099	56	5,090
6b	Coal	Wet-fired/P	10-100	57	Cyclone	5	0	3.5E-03	3.7E-04	9.6E-02	2.7E-02	1.5E-01	3.0E-04	1.6E+00	1.2E-02	1.1E-02	366	20	1,818
6c	Coal	Wet-fired/P	10-100	57	ESP	37	0	2.6E-02	2.7E-03	7.1E-01	2.0E-01	1.2E-01	2.2E-03	1.1E+01	9.0E-02	8.1E-02	217	149	13,452
6d	Coal	Wet-fired/P	10-100	57	FF	28	0	2.0E-02	1.9E-03	4.9E-01	1.3E-01	9.2E-02	1.5E-03	6.3E+00	6.1E-02	5.5E-02	82	101	10,180
6e	Coal	Wet-fired/P	10-100	57	FF/DSI	2	0	1.4E-03	1.3E-04	3.5E-02	9.6E-03	6.6E-03	1.1E-04	3.2E-01	4.4E-03	3.9E-03	6	7	727
6f	Coal	Wet-fired/P	10-100	57	Wet Scrubber	12	0	8.5E-03	7.9E-04	2.1E-01	5.8E-02	2.8E-01	6.5E-04	9.7E-01	2.6E-02	2.4E-02	1,757	43	4,363
7a	Coal	Wet-fired/P	100-250	186	No Control	12	0	2.8E-02	2.9E-03	7.5E-01	2.1E-01	1.3E+00	2.2E-03	1.3E+01	9.6E-02	8.5E-02	11,464	157	14,236
7b	Coal	Wet-fired/P	100-250	186	Cyclone	5	0	1.2E-02	1.2E-03	3.1E-01	8.7E-02	4.8E-01	9.8E-04	5.3E+00	4.0E-02	3.6E-02	1,194	66	5,932
7c	Coal	Wet-fired/P	100-250	186	Cyclone/Venturi/Pac	93	0	2.1E-01	1.1E-03	2.8E-01	7.8E-02	2.7E-01	8.8E-04	1.3E+00	3.6E-02	3.2E-02	1,194	59	1,186
7d	Coal	Wet-fired/P	100-250	186	ESP	5	0	2.1E-01	2.2E-02	5.9E+00	1.6E+00	1.0E+00	1.8E-02	8.8E+01	7.4E-01	6.6E-01	1,777	1,219	110,330
7e	Coal	Wet-fired/P	100-250	186	FF	79	0	1.8E-01	1.7E-02	4.5E+00	1.2E+00	8.5E-01	1.4E-02	5.8E+01	5.7E-01	5.1E-01	755	932	93,721
7f	Coal	Wet-fired/P	100-250	186	FF/SD	2	0	4.6E-03	3.4E-04	8.8E-02	2.4E-02	2.1E-03	2.7E-04	2.1E-01	1.1E-02	1.0E-02	19	18	2,373
7g	Coal	Wet-fired/P	100-250	186	FF/Wet Scrubber	2	0	4.6E-03	4.3E-04	1.1E-01	3.1E-02	2.1E-02	3.5E-04	5.3E-01	1.4E-02	1.3E-02	19	24	2,373

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
7h	Coal	Wall-fired/P	100-250	186	Wet Scrubber	14	0	3.2E-02	3.0E-03	7.9E-01	2.2E-01	1.1E+00	2.5E-03	3.7E+00	1.0E+01	9.0E-02	6.687	165	16,609
8a	Coal	Wall-fired/P	>250	600	No Control	17	0	1.3E-01	1.3E-02	3.4E+00	9.5E-01	5.9E+00	1.1E-02	5.8E+01	4.4E+01	3.9E-01	52,390	719	65,058
8c	Coal	Wall-fired/P	>250	600	ESP	196	0	1.5E+00	1.5E-01	4.0E+01	1.1E+01	6.8E+00	1.2E-01	6.0E+02	5.0E+00	4.5E+00	12,081	8,290	750,076
8d	Coal	Wall-fired/P	>250	600	ESP/SD	5	0	3.7E-02	3.5E-03	9.1E-01	2.5E-01	3.5E-02	2.8E-03	1.7E+00	1.2E-01	1.0E-01	308	190	19,135
8e	Coal	Wall-fired/P	>250	600	ESP/Venturi/Packed	7	0	5.2E-02	4.9E-03	1.3E+00	3.5E-01	2.4E-01	4.0E-03	6.0E+00	1.6E-01	1.4E-01	431	266	5,358
8f	Coal	Wall-fired/P	>250	600	ESP/Wet Scrubber	12	0	8.9E-02	8.4E-03	2.2E+00	6.1E-01	4.2E-01	6.8E-03	1.0E+01	2.8E-01	2.5E-01	740	457	45,923
8g	Coal	Wall-fired/P	>250	600	FF	36	0	2.7E-01	2.5E-02	6.6E+00	1.8E+00	1.2E+00	2.0E-02	8.0E+01	8.3E-01	7.4E-01	1,109	1,370	137,769
8h	Coal	Wall-fired/P	>250	600	FF/DSI	12	0	8.9E-02	8.4E-03	2.2E+00	6.1E-01	4.2E-01	6.8E-03	2.0E+01	2.8E-01	2.5E-01	370	457	45,923
8i	Coal	Wall-fired/P	>250	600	FF/SD	2	0	1.5E-02	1.1E-03	2.8E-01	7.9E-02	6.9E-03	8.8E-04	6.8E-01	3.6E-02	3.2E-02	62	59	7,654
8j	Coal	Wall-fired/P	>250	600	FF/Wet Scrubber	2	0	1.5E-02	1.4E-03	3.7E-01	1.0E-01	6.9E-02	1.1E-03	1.7E+00	4.6E-02	4.1E-02	62	76	7,654
8k	Coal	Wall-fired/P	>250	600	Wet Scrubber	2	0	1.5E-02	1.4E-03	3.7E-01	1.0E-01	4.8E-01	1.1E-03	1.7E+00	4.6E-02	4.1E-02	3,082	76	7,654
9a	Coal/Wood/NFF	Coal/Wood/NFF Solid	0-10	6	No Control	2	0	3.5E-05	0.0E+00	4.0E-02	0.0E+00	5.0E-03	9.6E-04	1.2E-01	0.0E+00	0.0E+00	38	26	73
9b	Coal/Wood/NFF	Coal/Wood/NFF Solid	0-10	6	Cyclone	5	0	8.8E-05	0.0E+00	9.9E-02	0.0E+00	1.1E-02	2.4E-03	3.0E-01	0.0E+00	0.0E+00	24	65	182
10a	Coal/Wood/NFF	Coal/Wood/NFF Solid	10-100	35	No Control	8	0	1.0E-03	0.0E+00	1.1E+00	0.0E+00	1.4E-01	2.8E-02	3.4E+00	0.0E+00	0.0E+00	1,095	744	2,084
10b	Coal/Wood/NFF	Liquid/NFF Solid	10-100	35	Cyclone	54	0	6.8E-03	0.0E+00	7.7E+00	0.0E+00	8.6E-01	1.9E-01	2.3E+01	0.0E+00	0.0E+00	1,848	5,020	14,064
10c	Coal/Wood/NFF	Liquid/NFF Solid	10-100	35	ESP	5	0	6.3E-04	0.0E+00	7.1E-01	0.0E+00	8.9E-03	1.7E-02	1.9E+00	0.0E+00	0.0E+00	14	465	1,302
11a	Coal/Wood/NFF	Liquid/NFF Solid	100-250	173	Cyclone	3	0	2.0E-03	0.0E+00	2.3E+00	0.0E+00	2.8E-01	5.6E-02	6.9E+00	0.0E+00	0.0E+00	551	1,497	4,193
11b	Coal/Wood/NFF	Liquid/NFF Solid	100-250	173	ESP	11	0	7.5E-03	0.0E+00	8.4E+00	0.0E+00	1.0E-01	2.0E-01	2.3E+01	0.0E+00	0.0E+00	162	5,487	15,374
11c	Coal/Wood/NFF	Liquid/NFF Solid	100-250	173	Wet Scrubber	2	0	1.4E-03	0.0E+00	1.4E+00	0.0E+00	1.3E-01	3.3E-02	3.2E+00	0.0E+00	0.0E+00	735	898	2,795
11d	Coal/Wood/NFF	Liquid/NFF Solid	100-250	173	FF	2	0	1.4E-03	0.0E+00	1.4E+00	0.0E+00	1.9E-02	3.3E-02	3.2E+00	0.0E+00	0.0E+00	15	898	2,795
12a	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	Cyclone	1	0	2.4E-03	0.0E+00	2.7E+00	0.0E+00	3.1E-01	6.6E-02	8.2E+00	0.0E+00	0.0E+00	655	1,779	4,985
12b	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	Cyclone/Venturi/Pac	4	0	9.7E-03	0.0E+00	9.8E+00	0.0E+00	6.8E-01	2.4E-01	8.2E+00	0.0E+00	0.0E+00	2,621	6,405	3,988
12c	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	ESP	47	0	1.1E-01	0.0E+00	1.3E+02	0.0E+00	1.6E+00	3.1E+00	3.5E+02	0.0E+00	0.0E+00	2,463	83,623	234,299
12d	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	ESP/FSI	1	0	2.4E-03	0.0E+00	2.7E+00	0.0E+00	3.4E-02	6.6E-02	4.1E+00	0.0E+00	0.0E+00	52	1,779	4,985
12e	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	ESP/SD	4	0	9.7E-03	0.0E+00	9.8E+00	0.0E+00	2.7E-02	2.4E-01	3.3E+00	0.0E+00	0.0E+00	210	6,405	19,940
12f	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	FF	5	0	1.2E-02	0.0E+00	1.2E+01	0.0E+00	1.7E-01	3.0E-01	2.9E+01	0.0E+00	0.0E+00	131	8,006	24,925
12g	Coal/Wood/NFF	Liquid/NFF Solid	>250	565	FF/FSI	7	0	1.7E-02	0.0E+00	1.7E+01	0.0E+00	2.4E-01	4.2E-01	2.9E+01	0.0E+00	0.0E+00	183	11,209	34,896

Appendix B. Baseline Emissions in Mgyr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No. of Boilers	No. of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
12h	Coal/Wood/NFF	All	>250	565	FF/Wet Scrubber	2	0	4.8E-03	0.0E+00	4.9E+00	0.0E+00	6.9E-02	1.2E-01	4.1E+00	0.0E+00	0.0E+00	52	3.203	9.970
12i	Liquid/NFF Solid	All	>250	565	Wet Scrubber	6	0	1.5E-02	0.0E+00	1.5E+01	0.0E+00	1.4E+00	3.6E-01	1.2E+01	0.0E+00	0.0E+00	7.862	9.608	29.911
13a	Coal/Wood/NFF	Other	0-10	3	No Control	18469	8268	0.0E+00	4.7E-01	0.0E+00	3.8E+00	2.8E+00	2.3E-01	3.9E-01	4.6E+00	0.0E+00	665	1,042,661	0
13b	Gas	Other	0-10	3	Cyclone	90	29	0.0E+00	2.1E-03	0.0E+00	1.7E-02	1.1E-02	1.0E-03	1.7E-03	2.1E-02	0.0E+00	1	4,641	0
13c	Gas	Other	0-10	3	ESP	9	110	0.0E+00	2.1E-03	0.0E+00	1.7E-02	1.2E-03	1.0E-03	1.8E-03	2.1E-02	0.0E+00	0	4,641	0
13d	Gas	Other	0-10	3	FF	182	64	0.0E+00	3.9E-03	0.0E+00	3.1E-02	2.5E-03	1.9E-03	2.5E-03	3.8E-02	0.0E+00	0	8,634	0
13e	Gas	Other	0-10	3	FF/DSI	5	0	0.0E+00	7.8E-05	0.0E+00	6.4E-04	5.2E-05	3.9E-05	3.7E-05	7.8E-04	0.0E+00	0	175	0
13f	Gas	Other	0-10	3	FF/Wet Scrubber	9	0	0.0E+00	1.4E-04	0.0E+00	1.2E-03	9.3E-05	7.0E-05	3.3E-05	1.4E-03	0.0E+00	0	316	0
13g	Gas	Other	0-10	3	Venturi/Packed	9	0	0.0E+00	1.4E-04	0.0E+00	1.2E-03	4.7E-04	7.0E-05	3.3E-05	1.4E-03	0.0E+00	0	316	0
13h	Gas	Other	0-10	3	Wet Scrubber	51	128	0.0E+00	2.8E-03	0.0E+00	2.3E-02	1.3E-02	1.4E-03	6.5E-04	2.8E-02	0.0E+00	2	6,282	0
14a	Gas	Other	10-100	33	No Control	9732	3994	0.0E+00	2.7E+00	0.0E+00	2.2E+01	1.6E+01	1.3E+00	2.2E+00	2.7E+01	0.0E+00	3,816	5,982,958	0
14b	Gas	Other	10-100	33	Cyclone	119	6	0.0E+00	2.4E-02	0.0E+00	2.0E-01	1.3E-01	2.2E-02	2.0E-02	2.4E-01	0.0E+00	9	54,486	0
14c	Gas	Other	10-100	33	ESP	23	0	0.0E+00	4.5E-03	0.0E+00	3.7E-02	2.7E-03	1.2E-03	3.4E-03	4.5E-02	0.0E+00	0	10,025	0
14d	Gas	Other	10-100	33	FF	69	29	0.0E+00	1.7E-02	0.0E+00	1.4E-01	1.1E-02	8.5E-03	1.1E-02	1.7E-01	0.0E+00	0	38,445	0
14e	Gas	Other	10-100	33	FF/Wet Scrubber	13	0	0.0E+00	2.3E-03	0.0E+00	1.9E-02	1.5E-03	1.1E-03	5.3E-04	2.3E-02	0.0E+00	0	89,444	0
14f	Gas	Other	10-100	33	Wet Scrubber	83	145	0.0E+00	4.0E-02	0.0E+00	3.3E-01	1.8E-01	2.0E-02	9.3E-03	4.0E-01	0.0E+00	32	89,444	0
15a	Gas	Other	100-250	164	No Control	1042	474	0.0E+00	1.5E+00	0.0E+00	1.2E+01	8.8E+01	7.3E-01	1.3E+00	1.5E+01	0.0E+00	2,128	3,336,111	0
15b	Gas	Other	100-250	164	Cyclone	21	0	0.0E+00	2.1E-02	0.0E+00	1.7E-01	1.1E-01	1.0E-02	1.7E-02	2.1E-01	0.0E+00	7	46,213	0
15c	Gas	Other	100-250	164	ESP	17	0	0.0E+00	1.7E-02	0.0E+00	1.4E-01	9.9E-03	8.2E-03	1.3E-02	1.7E-01	0.0E+00	0	37,410	0
15d	Gas	Other	100-250	164	ESP/Wet Scrubber	2	3	0.0E+00	4.4E-03	0.0E+00	3.6E-02	2.9E-03	3.2E-03	1.0E-03	4.4E-02	0.0E+00	0	9,903	0
15e	Gas	Other	100-250	164	FF	9	0	0.0E+00	8.0E-03	0.0E+00	6.5E-02	5.2E-03	3.9E-03	5.2E-03	7.9E-02	0.0E+00	0	17,825	0
15f	Gas	Other	100-250	164	Wet Scrubber	19	31	0.0E+00	4.4E-02	0.0E+00	3.6E-01	2.0E-01	2.2E-02	1.0E-02	4.4E-01	0.0E+00	35	99,027	0
16a	Gas	Other	>250	520	No Control	473	176	0.0E+00	2.2E+00	0.0E+00	1.8E+01	1.3E+01	1.1E+00	1.9E+00	2.2E+01	0.0E+00	3,204	5,023,702	0
16b	Gas	Other	>250	520	Cyclone	6	13	0.0E+00	6.6E-02	0.0E+00	5.4E-01	3.5E-01	3.2E-02	5.5E-02	6.5E-01	0.0E+00	23	147,073	0
16c	Gas	Other	>250	520	ESP	13	0	0.0E+00	4.5E-02	0.0E+00	3.7E-01	2.7E-02	2.2E-02	3.4E-02	4.5E-01	0.0E+00	1	100,629	0
16d	Gas	Other	>250	520	Wet Scrubber	8	11	0.0E+00	5.9E-02	0.0E+00	4.8E-01	2.7E-01	2.9E-02	1.4E-02	5.9E-01	0.0E+00	47	132,366	0
17a	Gas/Wood/Other	All	0-10	6	No Control	10	0	9.3E-05	0.0E+00	1.9E-02	2.8E-02	1.8E-03	1.5E-02	6.9E-02	6.9E-02	0.0E+00	79	138	0
17b	Gas/Wood/Other	All	0-10	6	Cyclone	11	0	1.0E-04	0.0E+00	2.1E-02	3.1E-02	1.8E-03	1.6E-02	7.6E-02	7.5E-02	0.0E+00	22	152	0
17c	Gas/Wood/Other	All	0-10	6	FF	2	0	1.9E-05	0.0E+00	3.5E-03	5.1E-03	3.6E-05	2.7E-03	9.7E-03	1.2E-02	0.0E+00	0	25	0
17d	Gas/Wood/Other	All	0-10	6	Wet Scrubber	2	0	1.9E-05	0.0E+00	3.5E-03	5.1E-03	2.5E-04	2.7E-03	3.4E-03	1.2E-02	0.0E+00	8	25	0
18a	Gas/Wood/Other	All	10-100	45	No Control	12	0	9.9E-04	0.0E+00	2.0E-01	3.0E-01	1.9E-02	1.6E-01	7.3E-01	7.3E-01	0.0E+00	833	1,465	0
18b	Gas/Wood/Other	All	10-100	45	Cyclone	66	0	5.4E-03	0.0E+00	1.1E+00	1.6E+00	9.5E-02	8.6E-01	4.0E+00	4.0E+00	0.0E+00	1,146	8,055	0
18c	Gas/Wood/Other	All	10-100	45	ESP	13	0	1.1E-03	0.0E+00	2.2E-01	3.2E-01	2.1E-03	1.7E-01	7.1E-01	7.9E-01	0.0E+00	18	1,587	0

Appendix B. Baseline Emissions in Mg/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
18d	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	ESP/Wet Scrubber	1	0	8.2E-05	0.0E+00	1.5E-02	2.2E-02	1.6E-04	1.2E-02	1.5E-02	5.4E-02	0.0E+00	1	110	0
18e	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	FF	1	0	8.2E-05	0.0E+00	1.5E-02	2.2E-02	1.6E-04	1.2E-02	4.3E-02	5.4E-02	0.0E+00	1	110	0
18f	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	FF/Wet Scrubber	1	0	8.2E-05	0.0E+00	1.5E-02	2.2E-02	1.6E-04	1.2E-02	1.5E-02	5.4E-02	0.0E+00	1	110	0
18g	Gas/Wood/Other Biomass/Liquid FF	All	10-100	45	Wet Scrubber	3	0	2.5E-04	0.0E+00	4.6E-02	6.7E-02	3.3E-03	3.5E-02	4.6E-02	1.6E-01	0.0E+00	104	330	0
19b	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	Cyclone	5	0	1.9E-03	0.0E+00	3.9E-01	5.7E-01	3.3E-02	3.0E-01	1.4E+00	1.4E+00	0.0E+00	395	2,774	0
19c	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	Cyclone/VenturiPac	1	0	3.7E-04	0.0E+00	7.0E-02	1.0E-01	3.6E-03	5.3E-02	6.9E-02	2.5E-01	0.0E+00	79	499	0
19d	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	ESP	12	0	4.5E-03	0.0E+00	9.3E-01	1.4E+00	8.7E-03	7.1E-01	3.0E+00	3.3E+00	0.0E+00	76	6,658	0
19e	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	ESP/Wet Scrubber	1	0	3.7E-04	0.0E+00	7.0E-02	1.0E-01	7.2E-04	5.3E-02	6.9E-02	2.5E-01	0.0E+00	6	499	0
19f	Gas/Wood/Other Biomass/Liquid FF	All	100-250	178	Wet Scrubber	15	0	6.6E-03	0.0E+00	1.0E+00	1.5E+00	7.6E-02	8.0E-01	1.0E+00	3.7E+00	0.0E+00	2,367	7,490	0
20a	Gas/Wood/Other Biomass/Liquid FF	All	>250	394	Cyclone	5	0	4.3E-03	0.0E+00	8.9E-01	1.3E+00	7.5E-02	6.8E-01	3.2E+00	3.2E+00	0.0E+00	907	6,380	0
20b	Gas/Wood/Other Biomass/Liquid FF	All	>250	394	ESP	11	0	9.5E-03	0.0E+00	2.0E+00	2.9E+00	1.8E-02	1.5E+00	6.3E+00	7.0E+00	0.0E+00	160	14,035	0
20c	Gas/Wood/Other Biomass/Liquid FF	All	>250	394	ESP/Wet Scrubber	2	0	1.7E-03	0.0E+00	3.2E-01	4.7E-01	3.3E-03	2.4E-01	3.2E-01	1.1E+00	0.0E+00	29	2,297	0
20d	Gas/Wood/Other Biomass/Liquid FF	All	>250	394	FF	3	0	2.6E-03	0.0E+00	4.8E-01	7.0E-01	5.0E-03	3.7E-01	1.3E+00	1.7E+00	0.0E+00	22	3,445	0
20e	Biomass/Liquid FF	All	>250	394	Wet Scrubber	24	0	2.1E-02	0.0E+00	3.9E+00	5.6E+00	2.8E-01	2.9E+00	3.8E+00	1.4E+01	0.0E+00	8,710	27,559	0
21a	Distillate Liquid FF	All	0-10	3	No Control	1900	166	1.3E-04	1.5E-02	0.0E+00	4.3E-01	1.5E-02	7.1E-03	2.6E+00	8.9E-02	6.4E-02	244	419	0
21b	Distillate Liquid FF	All	0-10	3	Cyclone	13	5	1.1E-06	1.3E-04	0.0E+00	3.7E-03	1.2E-04	6.2E-05	2.2E-02	7.7E-04	5.6E-04	1	4	0
21d	Distillate Liquid FF	All	0-10	3	FF	42	10	3.2E-06	3.4E-04	0.0E+00	9.7E-03	3.7E-05	1.6E-04	4.5E-02	2.0E-03	1.5E-03	0	9	0
21e	Distillate Liquid FF	All	0-10	3	Wet Scrubber	6	5	6.7E-07	7.3E-05	0.0E+00	2.0E-03	5.5E-05	3.4E-05	3.4E-03	4.2E-04	3.1E-04	1	2	0
22a	Distillate Liquid FF	All	10-100	29	No Control	787	101	5.2E-04	6.3E-02	0.0E+00	1.8E+00	6.1E-02	2.9E-02	1.1E+01	3.7E-01	2.7E-01	1,014	1,740	0
22b	Distillate Liquid FF	All	10-100	29	Cyclone	6	0	3.5E-06	4.3E-04	0.0E+00	1.2E-02	3.7E-04	2.0E-04	7.2E-02	2.5E-03	1.8E-03	2	12	0
22c	Distillate Liquid FF	All	10-100	29	ESP	6	0	3.5E-06	4.3E-04	0.0E+00	1.2E-02	4.1E-05	2.0E-04	6.5E-02	2.5E-03	1.8E-03	0	12	0
22d	Distillate Liquid FF	All	10-100	29	FF	9	0	5.3E-06	5.7E-04	0.0E+00	1.6E-02	6.2E-05	2.7E-04	7.6E-02	3.4E-03	2.4E-03	3	16	0
22g	Distillate Liquid FF	All	10-100	29	Wet Scrubber	6	0	3.5E-06	3.8E-04	0.0E+00	1.1E-02	2.9E-04	1.8E-04	1.8E-02	2.2E-03	1.6E-03	3	11	0
23a	Distillate Liquid FF	All	100-250	157	No Control	78	15	3.0E-04	3.6E-02	0.0E+00	1.0E+00	3.5E-02	1.7E-02	6.1E+00	2.1E-01	1.5E-01	575	966	0
23b	Distillate Liquid FF	All	100-250	157	Cyclone	3	0	9.5E-06	1.2E-03	0.0E+00	2.9E-02	1.1E-04	4.8E-04	1.4E-01	6.1E-03	4.4E-03	5	32	0
23d	Distillate Liquid FF	All	100-250	157	FF	3	0	9.5E-06	1.0E-03	0.0E+00	2.9E-02	1.1E-04	4.8E-04	1.4E-01	6.1E-03	4.4E-03	0	29	0
23f	Distillate Liquid FF	All	100-250	157	Wet Scrubber	6	0	1.9E-05	2.1E-03	0.0E+00	5.8E-02	1.6E-03	9.7E-04	9.8E-02	1.2E-02	8.8E-03	19	57	0
24a	Distillate Liquid FF	All	>250	355	No Control	53	51	7.5E-04	9.0E-02	0.0E+00	2.5E+00	8.8E-02	4.2E-02	1.5E+01	5.3E-01	3.8E-01	1,453	2,494	0
24d	Distillate Liquid FF	All	>250	355	ESP	3	0	2.2E-05	2.6E-03	0.0E+00	7.3E-02	2.5E-04	1.2E-03	4.0E-01	1.5E-02	1.1E-02	1	72	0

Appendix B. Baseline Emissions in Mgy/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustion Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
25a	NFF Liquid/NFF	All	0-10	6	No Control	2	4	4.2E-04	7.4E-05	4.4E-03	4.6E-03	1.8E-02	1.5E-03	0.0E+00	2.3E-03	2.0E-04	218	8	0
25b	NFF Liquid/NFF	All	0-10	58	Cyclone	4	0	2.8E-04	4.9E-05	2.9E-03	3.1E-03	1.1E-02	9.8E-04	0.0E+00	1.5E-03	1.3E-04	36	6	0
26a	NFF Liquid/NFF	All	10-100	58	No Control	29	3	2.4E-02	4.2E-03	2.5E-01	2.7E-01	1.1E+00	8.4E-02	0.0E+00	1.3E-01	1.1E-02	12,490	480	0
26b	NFF Liquid/NFF	All	10-100	58	Cyclone	10	0	7.5E-03	1.3E-03	7.9E-02	8.3E-02	3.0E-01	2.6E-02	0.0E+00	4.1E-02	3.5E-03	976	150	0
26c	NFF Liquid/NFF	All	10-100	58	ESP	3	0	2.3E-03	4.0E-04	2.4E-02	2.5E-02	9.9E-03	7.9E-03	0.0E+00	1.2E-02	1.1E-03	23	45	0
26d	NFF Liquid/NFF	All	10-100	58	FF	7	0	5.3E-03	8.3E-04	5.0E-02	5.2E-02	2.3E-02	1.7E-02	0.0E+00	2.6E-02	2.2E-03	27	95	0
26e	NFF Liquid/NFF	All	10-100	58	FF/SD	3	0	2.3E-03	2.8E-04	1.7E-02	1.7E-02	9.9E-04	5.5E-03	0.0E+00	8.6E-03	7.4E-04	12	32	0
26f	NFF Liquid/NFF	All	10-100	58	Wet Scrubber	21	4	7.5E-04	1.2E-04	7.1E-03	7.5E-03	2.3E-02	2.4E-03	0.0E+00	3.7E-03	3.2E-04	195	14	0
27a	NFF Liquid/NFF	All	100-250	161	No Control	21	0	4.8E-02	8.5E-03	5.1E-01	5.4E-01	2.1E+00	1.7E-01	0.0E+00	2.6E-01	2.3E-02	25,123	966	0
27b	NFF Liquid/NFF	All	100-250	161	ESP	7	0	1.4E-02	2.4E-03	1.4E-01	1.5E-01	5.9E-02	4.8E-02	0.0E+00	7.4E-02	6.4E-03	141	270	0
27c	NFF Liquid/NFF	All	100-250	161	ESP/Wet Scrubber	1	0	1.9E-03	3.1E-04	1.8E-02	1.9E-02	8.5E-03	6.1E-03	0.0E+00	9.5E-03	8.2E-04	20	35	0
27d	NFF Liquid/NFF	All	100-250	161	FF	1	0	1.9E-03	3.1E-04	1.8E-02	1.9E-02	8.5E-03	6.1E-03	0.0E+00	9.5E-03	8.2E-04	10	35	0
27e	NFF Liquid/NFF	All	100-250	161	Cyclone	1	0	1.9E-03	3.4E-04	2.0E-02	2.1E-02	7.6E-02	6.8E-03	0.0E+00	1.1E-02	9.1E-04	251	39	0
27f	NFF Liquid/NFF	All	100-250	161	Wet Scrubber	3	0	5.8E-03	9.2E-04	5.5E-02	5.8E-02	1.8E-01	1.8E-02	0.0E+00	2.9E-02	2.4E-03	1,507	104	0
27g	NFF Liquid/NFF	All	100-250	562	No Control	13	0	1.0E-01	1.8E-02	1.1E+00	1.1E+00	4.3E+00	3.6E-01	0.0E+00	5.6E-01	4.8E-02	53,439	2,054	0
27h	NFF Liquid/NFF	All	100-250	562	ESP	5	0	4.0E-02	7.0E-03	4.2E-01	4.4E-01	1.7E-01	1.4E-01	0.0E+00	2.2E-01	1.9E-02	411	790	0
28a	NFF Liquid/NFF	All	>250	562	No Control	4	0	3.2E-02	5.0E-03	3.0E-01	3.2E-01	2.8E-02	5.0E-03	1.9E-01	1.6E-01	1.3E-02	8,221	569	0
28b	NFF Liquid/NFF	All	>250	562	Wet Scrubber	76	4	1.7E-03	1.2E-02	1.0E-02	1.7E-01	2.8E-02	5.0E-03	1.9E-01	3.8E-01	1.5E-03	1,268	431	0
28c	NFF Liquid/NFF	All	>250	562	No Control	4	0	4.0E-02	7.0E-03	4.2E-01	4.4E-01	1.7E-01	1.4E-01	0.0E+00	5.6E-01	4.8E-02	411	790	0
28d	NFF Liquid/NFF	All	>250	562	Wet Scrubber	76	4	1.7E-03	1.2E-02	1.0E-02	1.7E-01	2.8E-02	5.0E-03	1.9E-01	3.8E-01	1.5E-03	1,268	431	0
29a	Wood	Other	0-10	5	No Control	4	0	3.2E-02	5.0E-03	3.0E-01	3.2E-01	2.8E-02	5.0E-03	1.9E-01	1.6E-01	1.3E-02	8,221	569	0
29b	Wood	Other	0-10	5	Cyclone	76	4	1.7E-03	1.2E-02	1.0E-02	1.7E-01	2.8E-02	5.0E-03	1.9E-01	3.8E-01	1.5E-03	1,268	431	0
29c	Wood	Other	0-10	5	FF	76	4	8.6E-05	5.3E-04	4.7E-04	7.5E-03	1.4E-04	2.3E-04	6.7E-03	1.7E-02	6.6E-05	1	19	0
30a	Wood	Other	10-100	30	No Control	73	0	1.1E-02	7.5E-02	6.7E-02	1.1E+00	5.7E-01	3.2E-02	1.2E+00	2.4E+00	9.3E-03	8,116	2,762	0
30b	Wood	Other	10-100	30	Cyclone	256	8	3.8E-02	2.6E-01	2.3E-01	3.7E+00	5.5E-03	9.8E-03	3.3E-01	7.3E-01	2.8E-03	7,048	9,593	0
30c	Wood	Other	10-100	30	ESP	12	11	3.3E-02	2.3E-02	2.0E-02	3.2E-01	5.5E-03	9.8E-03	3.3E-01	7.3E-01	2.8E-03	49	836	0
30d	Wood	Other	10-100	30	FF	5	9	2.0E-03	1.2E-02	1.1E-02	1.8E-01	3.3E-03	5.3E-03	1.6E-01	4.0E-01	1.5E-03	15	458	0
30e	Wood	Other	10-100	30	Wet Scrubber	26	3	4.2E-03	2.6E-02	2.3E-02	3.7E-01	4.8E-02	1.1E-02	1.2E-01	8.3E-01	3.2E-03	1,548	948	0
31a	Wood	Other	100-250	179	No Control	2	0	2.1E-03	1.4E-02	1.3E-02	2.0E-01	3.5E-02	6.2E-03	2.3E-01	4.6E-01	8.0E-03	1,553	528	0
31b	Wood	Other	100-250	179	Cyclone	9	0	9.4E-03	6.5E-02	5.7E-02	9.2E-01	1.4E-01	2.8E-02	1.0E+00	2.1E+00	8.0E-03	1,747	2,378	0
31c	Wood	Other	100-250	179	Cyclone/Venturi/Pac	1	0	1.0E-03	6.5E-03	5.7E-03	9.2E-02	8.7E-03	2.8E-03	2.9E-02	2.1E-01	8.0E-04	194	238	0
31d	Wood	Other	100-250	179	ESP	21	0	2.2E-02	1.5E-01	1.3E-01	2.1E+00	3.6E-02	6.5E-02	2.2E+00	4.8E+00	1.9E-02	326	5,549	0
31e	Wood	Other	100-250	179	Wet Scrubber	29	0	3.0E-02	1.9E-01	1.7E-01	2.7E+00	8.9E-02	8.0E-02	8.4E-01	6.0E+00	2.3E-02	11,260	6,896	0
32a	Wood	Other	>250	449	No Control	2	0	5.4E-03	3.7E-02	3.3E-02	5.2E-01	8.9E-02	1.6E-02	6.0E-01	1.2E+00	4.6E-03	3,996	1,360	0
32b	Wood	Other	>250	449	Cyclone	3	0	8.1E-03	5.6E-02	4.9E-02	7.9E-01	1.2E-01	2.4E-02	9.0E-01	1.8E+00	6.9E-03	1,498	2,039	0
32c	Wood	Other	>250	449	ESP	14	0	3.8E-02	2.6E-01	2.3E-01	3.7E+00	6.2E-02	1.1E-01	3.8E+00	8.3E+00	3.2E-02	559	9,517	0
32d	Wood	Other	>250	449	Wet Scrubber	5	0	1.3E-02	8.3E-02	7.4E-02	1.2E+00	1.6E-01	3.6E-02	3.7E-01	2.7E+00	1.0E-02	4,995	3,059	0
33a	Wood	Other	0-10	7	No Control	10	0	2.9E-04	2.0E-03	1.8E-03	2.9E-02	4.9E-03	8.7E-04	3.3E-02	6.5E-02	2.5E-04	218	74	0
33b	Wood	Other	0-10	7	Cyclone	5	0	1.5E-04	1.0E-03	9.0E-04	1.4E-02	2.2E-03	4.3E-04	1.6E-02	3.2E-02	1.3E-04	27	37	0
34a	Wood	Other	10-100	26	No Control	2	0	2.8E-04	1.9E-03	1.7E-03	2.7E-02	4.7E-03	8.3E-04	3.1E-02	6.2E-02	2.4E-04	208	71	0
34b	Wood	Other	10-100	26	Cyclone	28	0	3.9E-03	2.7E-02	2.4E-02	3.8E-01	5.9E-02	1.2E-02	4.4E-01	8.7E-01	3.4E-03	729	992	0
34c	Wood	Other	10-100	26	FF	1	0	1.4E-04	8.7E-04	7.7E-04	1.2E-02	2.3E-04	3.7E-04	1.1E-02	2.8E-02	1.1E-04	1	32	0
34d	Wood	Other	10-100	26	Wet Scrubber	1	0	1.4E-04	8.7E-04	7.7E-04	1.2E-02	2.3E-04	3.7E-04	1.1E-02	2.8E-02	1.1E-04	52	32	0
35a	Wood	Other	>250	677	ESP	1	0	3.6E-03	2.4E-02	2.2E-02	3.5E-01	5.9E-03	1.0E-02	3.6E-01	7.8E-01	3.0E-03	53	897	0
35b	Wood	Other	>250	677	ESP/Wet Scrubber	1	0	3.6E-03	2.2E-02	1.9E-02	3.1E-01	5.9E-03	9.4E-03	9.9E-02	7.0E-01	2.7E-03	53	807	0

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
36a	Wood/Other	All	0-10	7	No Control	3	0	2.4E-04	7.8E-04	0.0E+00	3.0E-03	8.3E-03	9.5E-04	2.9E-02	1.3E-03	3.4E-04	62	23	0
36b	Biomass/NFF Liquid/NFF Wood/Other	All	0-10	7	Cyclone	2	0	1.6E-04	5.2E-04	0.0E+00	2.0E-03	5.0E-03	6.3E-04	1.9E-02	8.5E-04	2.3E-04	10	15	0
36c	Biomass/NFF Liquid/NFF Wood/Other	All	0-10	7	ESP	1	0	7.9E-05	2.6E-04	0.0E+00	9.9E-04	2.8E-04	3.2E-04	8.6E-03	4.2E-04	1.1E-04	0	8	0
36e	Biomass/NFF Liquid/NFF Wood/Other	All	0-10	7	Wet Scrubber	5	0	4.0E-04	1.2E-03	0.0E+00	4.4E-03	9.7E-03	1.4E-03	1.2E-02	1.9E-03	5.1E-04	51	34	0
37a	Biomass/NFF Liquid/NFF Wood/Other	All	10-100	44	No Control	3	0	1.4E-03	4.6E-03	0.0E+00	1.8E-02	4.9E-02	5.6E-03	1.7E-01	7.5E-03	2.0E-03	364	136	0
37b	Biomass/NFF Liquid/NFF Wood/Other	All	10-100	44	Cyclone	12	0	5.6E-03	1.9E-02	0.0E+00	7.0E-02	1.8E-01	2.2E-02	6.8E-01	3.0E-02	8.0E-03	364	544	0
37c	Biomass/NFF Liquid/NFF Wood/Other	All	10-100	44	Cyclone/Venturi/Pac	1	0	4.7E-04	1.4E-03	0.0E+00	5.3E-03	8.2E-03	1.7E-03	1.4E-02	2.3E-03	6.0E-04	30	41	0
37d	Biomass/NFF Liquid/NFF Wood/Other	All	10-100	44	ESP	3	0	1.4E-03	4.6E-03	0.0E+00	1.8E-02	4.9E-03	5.6E-03	1.5E-01	7.5E-03	2.0E-03	7	136	0
37e	Biomass/NFF Liquid/NFF Wood/Other	All	10-100	44	FF	7	0	3.3E-03	9.7E-03	0.0E+00	3.7E-02	1.1E-02	1.2E-02	2.8E-01	1.6E-02	4.2E-03	8	286	0
37f	Biomass/NFF Liquid/NFF Wood/Other	All	10-100	44	Wet Scrubber	6	0	2.8E-03	8.3E-03	0.0E+00	3.2E-02	6.9E-02	1.0E-02	8.5E-02	1.4E-02	3.6E-03	364	245	0
38a	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	Cyclone	1	0	2.4E-03	7.8E-03	0.0E+00	2.9E-02	7.4E-02	9.4E-03	2.8E-01	1.3E-02	3.4E-03	153	228	0
38b	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	Cyclone/Venturi/Pac	1	0	2.4E-03	7.0E-03	0.0E+00	2.6E-02	4.1E-02	8.5E-03	7.1E-02	1.1E-02	3.0E-03	153	206	0
38c	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	ESP	15	0	3.5E-02	1.2E-01	0.0E+00	4.4E-01	1.2E-01	1.4E-01	3.8E+00	1.9E-01	5.0E-02	183	3,426	0
38d	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	FF	4	0	9.4E-03	2.8E-02	0.0E+00	1.1E-01	3.3E-02	3.4E-02	7.9E-01	4.5E-02	1.2E-02	24	822	0
38e	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	FF/FSI	1	0	2.4E-03	7.0E-03	0.0E+00	2.6E-02	8.3E-03	8.5E-03	1.4E-01	1.1E-02	3.0E-03	6	206	0
38f	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	FF/Wet Scrubber	1	0	2.4E-03	7.0E-03	0.0E+00	2.6E-02	8.3E-03	8.5E-03	7.1E-02	1.1E-02	3.0E-03	6	206	0
38g	Biomass/NFF Liquid/NFF Wood/Other	All	100-250	173	Wet Scrubber	15	0	3.5E-02	1.1E-01	0.0E+00	4.0E-01	8.7E-01	1.3E-01	1.1E+00	1.7E-01	4.5E-02	4,586	3,083	0
39a	Biomass/NFF Liquid/NFF Wood/Other	All	>250	513	No Control	1	0	6.7E-03	2.2E-02	0.0E+00	8.4E-02	2.4E-01	2.7E-02	8.1E-01	3.6E-02	9.6E-03	1,747	652	0
39b	Biomass/NFF Liquid/NFF Wood/Other	All	>250	513	Cyclone	4	0	2.7E-02	8.9E-02	0.0E+00	3.4E-01	8.5E-01	1.1E-01	3.2E+00	1.4E-01	3.8E-02	1,747	2,610	0
39c	Biomass/NFF Liquid/NFF Wood/Other	All	>250	513	ESP	26	0	1.8E-01	5.8E-01	0.0E+00	2.2E+00	6.1E-01	7.0E-01	1.9E+01	9.4E-01	2.5E-01	908	16,965	0
39e	Biomass/NFF Liquid/NFF	All	>250	513	ESP/Wet Scrubber	1	0	6.7E-03	2.0E-02	0.0E+00	7.6E-02	2.4E-02	2.4E-02	2.0E-01	3.2E-02	8.6E-03	35	587	0

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
39f	Wood/Other	All	>250	513	FF	1	0	6.7E-03	2.0E-02	0.0E+00	7.6E-02	2.4E-02	2.4E-02	5.7E-01	3.2E-02	8.6E-03	17	587	0
39g	Biomass/NFF Liquid/NFF	All	>250	513	Wet Scrubber	33	0	2.2E-01	6.6E-01	0.0E+00	2.5E+00	5.5E+00	8.0E-01	6.7E+00	1.1E+00	2.8E-01	28,824	19,379	0
40a	Residual Liquid FF	All	0-10	3	No Control	485	75	3.3E-02	4.0E-03	0.0E+00	1.1E-01	7.6E+00	1.9E-03	6.7E-01	1.5E-01	4.2E+00	1,012	28	0
40b	Residual Liquid FF	All	0-10	3	Cyclone	3	0	1.8E-04	2.2E-05	0.0E+00	6.2E-04	3.8E-02	1.0E-05	3.7E-03	8.1E-04	2.3E-02	1	0	0
40d	Residual Liquid FF	All	0-10	3	FF	9	0	5.4E-04	5.9E-05	0.0E+00	1.7E-03	1.3E-02	2.8E-05	7.9E-03	2.2E-03	6.2E-02	0	0	0
41a	Residual Liquid FF	All	10-100	37	No Control	1048	508	1.2E+00	1.4E-01	0.0E+00	4.0E+00	2.7E+02	6.6E-02	2.4E+01	5.2E+00	1.5E+02	35,965	1,013	0
41b	Residual Liquid FF	All	10-100	37	Cyclone	44	0	3.3E-02	4.0E-03	0.0E+00	1.1E-01	6.9E+00	1.9E-03	6.8E-01	1.5E-01	4.2E+00	254	29	0
41c	Residual Liquid FF	All	10-100	37	ESP	0	4	3.0E-03	3.0E-04	0.0E+00	1.0E-02	7.0E-02	1.7E-04	5.5E-02	1.3E-02	3.8E-01	2	3	0
41d	Residual Liquid FF	All	10-100	37	FF	34	0	2.5E-02	2.8E-03	0.0E+00	7.8E-02	5.9E-01	1.3E-03	3.7E-01	1.0E-01	2.9E+00	8	20	0
41g	Residual Liquid FF	All	10-100	37	Wet Scrubber	28	4	2.4E-02	2.6E-03	0.0E+00	7.3E-02	3.9E+00	1.2E-03	1.2E-01	9.6E-02	2.7E+00	370	19	0
42a	Residual Liquid FF	All	100-250	172	No Control	179	66	8.5E-01	1.0E-01	0.0E+00	2.9E+00	2.0E+02	4.8E-02	1.8E+01	3.8E+00	1.1E+02	26,325	741	0
42b	Residual Liquid FF	All	100-250	172	Cyclone	53	0	1.8E-01	2.2E-02	0.0E+00	6.3E-01	3.9E+01	1.0E-02	3.8E+00	8.2E-01	2.3E+01	1,424	160	0
42c	Residual Liquid FF	All	100-250	172	ESP	14	0	4.8E-02	5.9E-03	0.0E+00	1.7E-01	1.1E+00	2.8E-03	9.0E-01	2.2E-01	6.2E+00	30	42	0
42e	Residual Liquid FF	All	100-250	172	FF	2	0	6.9E-03	7.6E-04	0.0E+00	2.1E-02	8.1E-01	3.5E-04	3.6E-02	2.8E-02	7.9E-01	2	5	0
42f	Residual Liquid FF	All	100-250	172	Venturi/Packed	2	0	4.8E-02	5.3E-03	0.0E+00	1.5E-01	7.9E+00	2.5E-03	2.5E-01	2.0E-01	5.6E+00	107	5	0
43a	Residual Liquid FF	All	100-250	172	Wet Scrubber	14	0	1.6E+00	1.9E-01	0.0E+00	5.3E+00	3.7E+02	8.9E-02	3.2E+01	7.0E+00	2.0E+02	48,523	1,366	0
43b	Residual Liquid FF	All	>250	547	No Control	125	17	1.2E-01	1.5E-02	0.0E+00	4.1E-01	2.5E-01	6.9E-03	2.5E+00	5.4E-01	1.5E+01	940	106	0
43d	Residual Liquid FF	All	>250	547	Cyclone	11	0	5.5E-02	6.7E-03	0.0E+00	1.9E-01	1.3E+00	3.1E-03	1.0E+00	2.5E-01	7.0E+00	34	48	0
44a	Bagasse/Other	All	10-100	72	Cyclone	9	0	7.2E-03	2.4E-02	2.5E-01	3.6E-01	2.3E-01	1.9E-01	8.8E-01	8.7E-01	1.0E-02	468	1,757	0
44b	Bagasse/Other	All	10-100	72	Wet Scrubber	27	0	2.2E-02	6.4E-02	6.6E-01	9.7E-01	5.3E-01	5.1E-01	6.6E-01	2.4E+00	2.8E-02	2,807	4,745	0
45a	Bagasse/Other	All	100-250	158	No Control	2	0	4.3E-03	1.4E-02	1.5E-01	2.1E-01	1.5E-01	1.1E-01	5.2E-01	5.2E-01	6.1E-03	1,117	1,049	0
45b	Bagasse/Other	All	100-250	158	Cyclone	13	0	2.2E-02	9.2E-02	1.4E+00	1.4E+00	8.8E-01	7.3E-01	3.4E+00	3.4E+00	4.0E-02	1,815	6,818	0
45c	Bagasse/Other	All	100-250	158	Wet Scrubber	21	0	4.5E-02	1.3E-01	1.4E+00	2.0E+00	1.1E+00	1.1E+00	1.2E+00	4.9E+00	5.8E-02	5,864	9,912	0
46a	Bagasse/Other	All	>250	419	ESP	2	0	1.1E-02	3.7E-02	3.8E-01	5.5E-01	3.9E-02	2.9E-01	1.2E+00	1.3E+00	1.6E-02	58	2,714	0
46b	Bagasse/Other	All	>250	419	ESP/Activated Carb	8	0	1.1E-02	1.3E-01	1.4E+00	2.0E+00	1.6E-01	1.0E+00	4.9E+00	4.8E+00	5.7E-02	231	9,769	0
46c	Bagasse/Other	All	>250	419	Wet Scrubber	50	0	2.8E-01	8.3E-01	8.5E+00	1.2E+01	6.8E+00	6.5E+00	8.5E+00	3.0E+01	3.6E-01	36,122	61,059	0
47a	Coal	Other	0-10	4	No Control	36	0	3.0E-04	3.1E-05	8.1E-03	2.2E-03	1.4E-02	2.5E-05	1.4E-01	1.0E-03	9.2E-04	123	2	153
48a	Coal	Other	10-100	54	No Control	10	0	1.1E-03	1.2E-04	3.0E-02	8.4E-03	5.2E-02	9.5E-05	5.1E-01	3.9E-03	3.4E-03	462	6	574
48b	Coal	Other	10-100	54	Cyclone	54	0	6.0E-03	6.3E-04	1.6E-01	4.5E-02	2.5E-01	5.1E-04	2.8E+00	2.1E-02	1.9E-02	624	34	3,100
48c	Coal	Other	10-100	54	ESP	3	0	3.4E-04	3.5E-05	9.1E-03	2.3E-03	1.6E-03	2.8E-05	1.4E-01	1.2E-03	1.0E-03	3	2	172
48d	Coal	Other	10-100	54	FF	3	0	3.4E-04	3.1E-05	8.2E-03	2.5E-03	1.6E-03	2.6E-05	1.1E-01	1.0E-03	9.3E-04	1	51	4,568
49b	Coal	Other	100-250	166	Cyclone	26	0	8.9E-03	9.3E-04	2.4E-01	6.7E-02	3.7E-01	7.6E-04	4.1E+00	3.1E-02	2.8E-02	924	2	529
49c	Coal	Other	100-250	166	ESP	3	0	1.0E-03	1.1E-04	2.8E-02	7.8E-03	4.8E-03	8.7E-05	4.2E-01	3.6E-03	3.2E-03	9	6	3,003
50f	Coal	Other	>250	565	ESP	5	0	5.8E-03	6.1E-04	1.6E-01	4.4E-02	2.7E-02	5.0E-04	2.4E+00	2.0E-02	1.8E-02	48	12	1,201
52a	Coal	Other	>250	565	FF	2	0	2.3E-03	2.2E-04	5.7E-02	1.6E-02	1.1E-02	1.8E-04	7.5E-01	7.3E-03	6.5E-03	10	6	545
52b	Coal	Other	10-100	57	No Control	9	0	1.1E-03	1.1E-04	2.9E-02	8.0E-03	4.9E-02	9.0E-05	4.9E-01	3.7E-03	3.3E-03	439	12	1,091
52f	Coal	Other	10-100	57	Cyclone	18	0	2.1E-03	2.2E-04	5.8E-02	1.6E-02	8.9E-02	1.8E-04	9.7E-01	7.3E-03	6.5E-03	220	3	303
53f	Coal	Other	100-250	186	Wet Scrubber	5	0	5.9E-04	5.5E-05	1.4E-02	4.0E-03	1.9E-02	4.5E-05	6.7E-02	1.8E-03	1.6E-03	122	13	1,186
53d	Coal	Other	100-250	186	Cyclone	6	0	2.3E-03	2.4E-04	6.3E-02	1.7E-02	9.7E-02	2.0E-04	1.1E+00	8.0E-03	7.1E-03	239	7	593
53d	Coal	Other	100-250	186	ESP	3	0	1.2E-03	1.2E-04	3.1E-02	8.7E-03	5.4E-03	9.8E-05	4.8E-01	4.0E-03	3.6E-03	10		

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	p-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
54c	Coal	Wall-fired/P	>250	600	ESP	15	0	1.9E-02	1.9E-03	5.1E-01	1.4E-01	8.7E-02	1.6E-03	7.7E+00	6.4E-02	5.7E-02	154	106	9.567
55b	Coal/Wood/NFF	All	0-10	6	Cyclone	1	0	3.1E-06	0.0E+00	3.5E-03	0.0E+00	3.9E-04	8.5E-05	1.0E-02	0.0E+00	0.0E+00	1	2	6
56b	Liquid/NFF Solid	All	10-100	35	Cyclone	2	0	3.6E-05	0.0E+00	4.1E-02	0.0E+00	4.6E-03	9.9E-04	1.2E-01	0.0E+00	0.0E+00	10	27	74
57d	Coal/Wood/NFF	All	100-250	173	FF	1	0	8.9E-05	0.0E+00	9.0E-02	0.0E+00	1.3E-03	2.2E-03	2.1E-01	0.0E+00	0.0E+00	1	59	184
58a	Gas	Other	0-10	3	No Control	1588	350	0.0E+00	5.4E-03	0.0E+00	4.4E-02	3.2E-02	2.7E-03	4.6E-03	5.4E-02	0.0E+00	8	12,190	0
58d	Gas	Other	0-10	3	FF	13	22	0.0E+00	8.8E-05	0.0E+00	7.2E-04	5.8E-05	4.4E-05	5.8E-05	8.8E-04	0.0E+00	0	198	0
58h	Gas	Other	0-10	3	Wet Scrubber	10	6	0.0E+00	4.0E-05	0.0E+00	3.3E-04	1.9E-04	2.0E-05	9.4E-06	4.0E-04	0.0E+00	0	91	0
59a	Gas	Other	10-100	33	No Control	561	220	0.0E+00	2.4E-02	0.0E+00	2.0E-01	1.4E-01	1.2E-02	2.0E-02	2.4E-01	0.0E+00	34	54,036	0
59b	Gas	Other	10-100	33	Cyclone	16	0	0.0E+00	4.9E-04	0.0E+00	4.0E-03	2.6E-03	2.4E-04	4.2E-04	4.9E-03	0.0E+00	0	1,107	0
59d	Gas	Other	10-100	33	FF	13	0	0.0E+00	3.6E-04	0.0E+00	2.9E-03	1.8E-04	1.8E-04	2.4E-04	3.6E-03	0.0E+00	0	810	0
59e	Gas	Other	10-100	33	FF/Wet Scrubber	7	0	0.0E+00	1.9E-04	0.0E+00	1.6E-03	1.3E-04	9.6E-05	4.5E-05	1.9E-03	0.0E+00	0	436	0
59f	Gas	Other	10-100	33	Wet Scrubber	2	0	0.0E+00	5.6E-05	0.0E+00	4.5E-04	2.6E-04	2.7E-05	1.3E-05	5.5E-04	0.0E+00	0	125	0
60a	Gas	Other	100-250	164	No Control	74	12	0.0E+00	1.3E-02	0.0E+00	1.1E-01	7.8E-02	6.5E-03	1.1E-02	1.3E-01	0.0E+00	19	29,571	0
60b	Gas	Other	100-250	164	Cyclone	2	0	0.0E+00	3.1E-04	0.0E+00	2.5E-03	1.6E-03	1.5E-04	2.8E-04	3.1E-03	0.0E+00	0	688	0
60e	Gas	Other	100-250	164	FF	2	0	0.0E+00	2.8E-04	0.0E+00	2.3E-03	1.8E-04	1.4E-04	1.8E-04	2.7E-03	0.0E+00	0	619	0
61a	Gas	Other	>250	520	No Control	26	14	0.0E+00	1.9E-02	0.0E+00	1.6E-01	1.2E-01	9.6E-03	1.6E-02	1.9E-01	0.0E+00	28	43,609	0
62a	Biomass/Liquid Other	All	0-10	6	No Control	1	0	1.6E-06	0.0E+00	3.4E-04	5.0E-04	3.2E-05	2.6E-04	1.2E-03	1.2E-03	0.0E+00	1	2	0
62b	Gas/Wood/Other	All	0-10	6	Cyclone	1	0	1.6E-06	0.0E+00	3.4E-04	5.0E-04	2.9E-05	2.6E-04	1.2E-03	1.2E-03	0.0E+00	0	2	0
63a	Biomass/Liquid FF	All	10-100	45	No Control	2	0	2.5E-05	0.0E+00	5.1E-03	7.4E-03	4.8E-04	3.9E-03	1.8E-02	1.8E-02	0.0E+00	21	36	0
63b	Gas/Wood/Other	All	10-100	45	Cyclone	1	0	1.2E-05	0.0E+00	2.5E-03	3.7E-03	2.1E-04	1.9E-03	9.1E-03	9.0E-03	0.0E+00	3	18	0
64d	Biomass/Liquid FF	All	100-250	178	ESP	1	0	4.9E-05	0.0E+00	1.0E-02	1.5E-02	9.4E-05	7.7E-03	3.2E-02	3.6E-02	0.0E+00	1	72	0
64e	Gas/Wood/Other	All	100-250	178	ESP/Wet Scrubber	1	0	4.9E-05	0.0E+00	9.1E-03	1.3E-02	9.4E-05	6.9E-03	9.0E-03	3.2E-02	0.0E+00	1	65	0
65e	Biomass/Liquid FF	All	>250	394	Wet Scrubber	1	0	1.1E-04	0.0E+00	2.0E-02	2.9E-02	1.5E-03	1.5E-02	2.0E-02	7.1E-02	0.0E+00	45	144	0
66a	Distillate Liquid FF	All	0-10	3	No Control	407	21	4.3E-06	5.2E-04	0.0E+00	1.5E-02	5.1E-04	2.4E-04	8.9E-02	3.1E-03	2.2E-03	8	14	0
67a	Distillate Liquid FF	All	10-100	29	No Control	207	8	2.1E-05	2.5E-03	0.0E+00	7.2E-02	2.5E-03	1.2E-03	4.3E-01	1.5E-02	1.1E-02	41	70	0
67d	Distillate Liquid FF	All	10-100	29	FF	3	0	2.9E-07	3.2E-05	0.0E+00	9.0E-04	3.4E-06	1.5E-05	4.2E-03	1.9E-04	1.4E-04	0	1	0
68a	Distillate Liquid FF	All	100-250	157	No Control	42	1	2.3E-05	2.7E-03	0.0E+00	7.7E-02	2.7E-03	1.3E-03	4.7E-01	1.8E-02	1.2E-02	44	76	0
68a	Distillate Liquid FF	All	>250	355	No Control	10	0	1.3E-05	1.6E-03	0.0E+00	4.5E-02	1.5E-03	7.4E-04	2.7E-01	9.3E-02	6.7E-03	26	44	0
69d	Distillate Liquid FF	All	>250	355	ESP	3	0	3.6E-06	4.3E-04	0.0E+00	1.2E-02	4.2E-05	2.0E-04	6.7E-02	2.5E-03	1.8E-03	0	12	0
70b	NFF Liquid/NFF	All	10-100	58	Cyclone	3	1	4.4E-04	7.7E-05	4.6E-03	4.8E-03	1.7E-02	1.5E-03	0.0E+00	2.4E-03	2.0E-04	57	9	0
72b	NFF Liquid/NFF Solid/Gas	All	>250	562	ESP	1	0	1.1E-03	1.9E-04	1.1E-02	1.2E-02	4.6E-03	3.7E-03	0.0E+00	5.8E-03	4.9E-04	11	21	0

Appendix B. Baseline Emissions in MG/yr of HAPs and Criteria Pollutants from Existing Sources

Model No	Material	Combustor Type	Capacity Range (MMBtu/hr)	Avg Capacity (MMBtu/hr)	Control Level	No of Boilers	No of Heaters	Mercury	Methyl Chloroform	Methyl Ethyl Ketone	Methylene Chloride	Nickel	o-Xylene	Phosphorus	Toluene	Xylenes	PM	CO	Sulfur Dioxide
73a	Wood	Other	0-10	5	No Control	6	0	2.3E-05	1.5E-04	1.4E-04	2.2E-03	3.7E-04	6.6E-05	2.5E-03	5.0E-03	1.9E-05	17	6	0
73b	Wood	Other	0-10	5	Cyclone	8	0	3.0E-05	2.1E-04	1.8E-04	2.9E-03	4.5E-04	8.8E-05	3.3E-03	6.6E-03	2.6E-05	6	8	0
74a	Wood	Other	10-100	30	No Control	4	0	9.0E-05	6.2E-04	5.5E-04	8.7E-03	1.5E-03	2.7E-04	1.0E-02	2.0E-02	7.7E-05	67	23	0
74b	Wood	Other	10-100	30	Cyclone	2	0	4.5E-05	3.1E-04	2.7E-04	4.4E-03	6.7E-04	1.3E-04	5.0E-03	9.9E-03	3.8E-05	8	11	0
74e	Wood	Other	10-100	30	Wet Scrubber	2	0	4.5E-05	2.8E-04	2.5E-04	3.9E-03	5.2E-04	1.2E-04	1.3E-03	8.9E-03	3.5E-05	17	10	0
75e	Wood	Other	100-250	179	Wet Scrubber	1	0	1.3E-04	8.3E-04	7.4E-04	1.2E-02	1.6E-03	3.6E-04	3.7E-03	2.7E-02	1.0E-04	50	30	0
76b	Wood	Wall-fired/P	0-10	7	Cyclone	3	0	1.6E-05	1.1E-04	9.6E-05	1.5E-03	2.3E-04	4.6E-05	1.8E-03	3.5E-03	1.3E-05	3	4	0
77b	Wood	Wall-fired/P	10-100	26	Cyclone	2	0	3.9E-05	2.7E-04	2.4E-04	3.8E-03	5.8E-04	1.1E-04	4.3E-03	8.6E-03	3.3E-05	7	10	0
78a	Wood/Other	Biomass/NFF Liquid/NFF	0-10	7	No Control	2	0	2.3E-05	7.7E-05	0.0E+00	2.9E-04	8.2E-04	9.3E-05	2.8E-03	1.2E-04	3.3E-05	6	2	0
79b	Wood/Other	Biomass/NFF Liquid/NFF	10-100	44	Cyclone	3	0	2.2E-04	7.2E-04	0.0E+00	2.7E-03	6.9E-03	8.8E-04	2.6E-02	1.2E-03	3.1E-04	14	21	0
79d	Wood/Other	Biomass/NFF Liquid/NFF	10-100	44	ESP	1	0	7.3E-05	2.4E-04	0.0E+00	9.1E-04	2.6E-04	2.9E-04	7.9E-03	3.9E-04	1.0E-04	0	7	0
80a	Residual Liquid FF	All	0-10	3	No Control	159	8	1.7E-03	2.0E-04	0.0E+00	5.7E-03	3.9E-01	9.5E-05	3.5E-02	7.5E-03	2.1E-01	52	1	0
81a	Residual Liquid FF	All	10-100	37	No Control	295	23	3.9E-02	4.8E-03	0.0E+00	1.3E-01	9.2E+00	2.2E-03	8.2E-01	1.8E-01	5.0E+00	1,225	34	0
81g	Residual Liquid FF	All	10-100	37	Wet Scrubber	9	0	1.1E-03	1.2E-04	0.0E+00	3.4E-03	1.8E-01	5.7E-05	5.8E-03	4.5E-03	1.3E-01	17	1	0
82a	Residual Liquid FF	All	100-250	172	No Control	63	0	3.6E-02	4.4E-03	0.0E+00	4.4E-02	8.5E+00	2.1E-03	7.5E-01	1.6E-01	4.6E+00	399	32	0
83a	Residual Liquid FF	All	>250	547	No Control	7	0	1.3E-02	1.6E-03	0.0E+00	4.4E-02	3.0E+00	7.3E-04	2.7E-01	5.8E-02	1.6E+00	11	11	0
Total						42,952	15,248	11.9	13.1	409	189	1,111	32.9	2,868	251	560	766,022	16,819,084	3,405,264